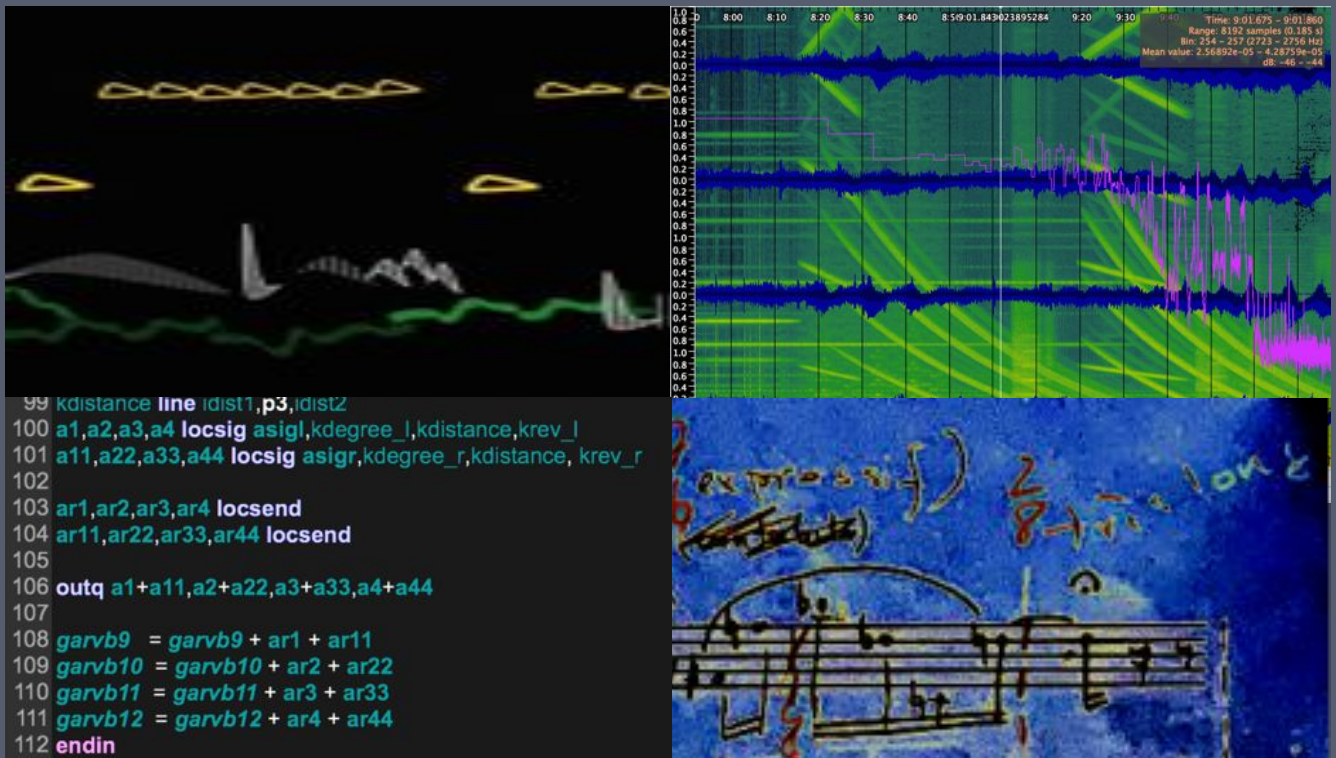


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International Conference Proceedings

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Preface

What does composing music mean today? What is the role of the composer in today's musical world? Can we continue to talk about "composing music" in every situation of musical creation? Or should we consider recourse to other expressions? What is the composition process in the case of museum exhibitions, or installations? Can a sound artist be considered a composer of music? Is the creation of sound art a form of musical composition? Furthermore, can real-time coding or free improvisation be considered forms of instantaneous musical composition? In a world where technological means make musical creation accessible to all, what is the role of the "traditional composer"?

Music is today more diverse than ever before. The range of genres, practices, techniques and technologies, forms of dissemination and reception have changed the way in which music is composed. Music is now almost omnipresent in our society spanning concert halls, museums, digital media, as well as public and private spaces. For each of these listening situations, someone conceives and composes the music, creating the sound and organizing the musical discourse through means of a diversity of approaches, knowledge and technologies. All of these means are crucial given their influences over the final outputs.

The International Conferences NOVA Contemporary Music Meetings (from now on NCMM) is becoming the definitive form of the biennial international event inaugurated in 2016 in Lisbon. The NCMM series focuses on a variety of questions interrelating with the music of the 20th century and was conceived as a contribution to the development of multidisciplinary and collaborative research in the field of contemporary music. This event brings together researchers, musicologists, composers and performers, and other related artists and professionals. NCMM's first edition took place in Lisbon in 2018 and count on the participation of artists and researchers all over the world.

The present collection provides a selection of the NCMM18 conference paper proceedings that seeks to respond to the challenges specified above, which approach current artistic practices and research in the context of contemporary music. Taken collectively, these papers address themes that span composition techniques and technologies, including new instruments and unconventional tools and means; real time composition and interactive music, including live coding, electronic, interactive and computer music; collaborative composition, free improvisations and open composition; practice-based research in music, including composition, performance and collaborative musical activities; the recent challenges of contemporary music for musical analysis and history; and alongside issues concerning intertextuality and authenticity within the context of contemporary music.

By exploring intertextuality as a practice-based research tool, Ana Cristina **Bernardo** undertakes performance analysis of both the works, *Sedoso* and *Saudoso*, composed by Eurico Carrapatoso, questioning the meanings produced during the analytical process of these two pieces. While Mauro Fosco **Bertola** lists issues of contemporary music and the sublime, examining the concept of the sublime object as proposed by Slavoj Žižek, thus proposing the latest developments on the subject. James **Dalton** enlightens on how some aspects of microtonality and just intonation, a non-tempered tuning system which was previously seen as a flaw in the system, can be integrated into the music of the late 20th century. The author

examines two works from the composers Ben Johnston and Lou Harrison as case studies given how they chose to transform the above-mentioned resources into structural and expressive devices before deploying them to outline the form in their compositions.

On the other side, Alexandro **Damasceno** discusses the variation of musical motives principle – as proposed by Terry O’Mahoney in his Motivic Drumset Soloing method – as applied to the drumset, and considering it a tool for the development of a musical discourse. From his perspective, the application of such procedures, with special emphasis on the drum, allow for the creation of coherent structural analysis as well as also benefiting the musical performance. Violetta **Kostka** dedicates her paper to the intentionally intertextual music by Polish composer Paweł Szymański (b. 1954), who is presented in the light of Ryszard Nycz’s intertextual theory. Furthermore, the two pieces, *Miserere* and *Three Pieces*, by Paweł Szymański are here discussed within the scope of capturing their meaning. Amy **Mallett** addresses her experience of composing in a remote [digital] collaboration. This describes her partnership with the Canadian writer Gary Swartz for the composition of *Whispers of the Heart* (2014). She envisions demonstrating certain means to de-mystify and develop the composer’s creative process.

In addition, Ana **Martins** and Paula **Guerra** explore the important relation between rock music and drugs use and abuse through the lens of media. In discussing five case studies, they investigate how Portuguese media account for this relation, examining both the socio-cultural panorama and the styles of these news articles. In turn, Marcello **Messina** and Leonardo Vieira **Feichas** examine some presentations of the work of art *Ntrallazzu*. This cycle of works stems from live interactive scores that reflect on the multifaceted philosophical concepts of *liveness* and *interaction*. In this article, the authors demonstrate how works dependent on technological means often continue to reveal their weaknesses and instabilities. Mariana **Miguel**, Paulo Maria **Rodrigues** and Helena **Rodrigues** present an overview of *Companhia de Música Teatral*’s work and its implications for establishing a continuum between community music and educative practices. They also clarify how the concept of “artistic-educative constellations” has emerged and how it continues to inspire the company’s work. Cláudio **Pina** explores the world of extended techniques in the pipe organ as another means of producing sound. He argues that several new techniques have been developed in the repertoire and in the creation of contemporary pipe organs and thus new approaches to notation and explanation are essential to attending performances and gaining the interest of future generations.

In their paper, Henrique **Portovedo**, Paulo Ferreira **Lopes** and Ricardo **Mendes** introduce the concept of HASGS regarding the augmentation procedures applied to an acoustic instrument, demonstrating how composers applied technology prototyped for the composition of works. The authors consider their paper establishes a resource featuring composition methods of use to composers and programmers. Javier **Subatin**’s paper centers on the observation of the current reality of contemporary jazz in which composition and written music are acquiring great importance while intending to understand the issues that contemporary jazz composers today face. According to the author, the results represent a subject of interest to the educators, students, musicians, composers and researchers working in the field. Rita **Torres** presents new methods for applying guitar multiphonics in the work *Si amanece, nos vamos*. The author states that despite the growing interest in this unconventional playing technique, there are still various gaps that need filling that are described in her paper. Finally, Jeong Cheng Katy **Weatherly** provides insights into a contemporary music program that specifically targets young musicians. She argues that collaborative composition with younger age groups in the field of music is still unusual. Throughout this paper, she sets out a well-rounded music program of assistance in promoting the

idea that a musician is a composer, a performer, and an improviser to the future generations facing the ever-changing 21st century.

We would like to thank all the authors who contributed to the present conference proceedings, and also a final word of appreciation to the members of the Scientific Committee and all the reviewers who so greatly contributed to this publication.

Lisbon, April 2, 2021

Filipa Magalhães and Riccardo Wanke

Contemporary Portuguese music performance as research: intertextuality in *Sedoso* and *Saudoso* as a case study

Ana Cristina Bernardo¹

Abstract. Aiming for a contemporary music performance, one parameterizes that the performer should think in terms of musical results, following the purpose of connecting performance practice and analytical musicology. The interpretative narrative will be reached through the performer's imagery, exploring intertextuality as a practice-based research tool. Intertextuality is a way of settling a commitment to make available all text levels, on behalf of the performance analysis, including the semiotic elements inherent to the genesis of a piece, and the composer's assumptions. Composed by Eurico Carrapatoso, *Espelho da alma*, a string trio with piano, is comprised by seven pieces, including *Sedoso* and *Saudoso*. One intends to analyse the performance impact through the network of meanings generated during the process of analysis between the two pieces. The enounced analytical strategies become complementary, given that the contemporary music performer's specificity tackles the interpreter's need to construct his own imagery. It is concluded that collaborative musical activities constitute a primordial tool for the performer to reach their goals, due to the vast compositional conception's diversity generated with 21st century music.

Keywords. Contemporary music; Portuguese chamber music; Performance analysis; Intertextuality.

Introduction

Aesthetical and stylistic pluralism, a core trait of western classical music in the last two decades of the 20th century, is continued in the first decade of the 21st century, as stated by Griffiths:

Music's move into a new century – the first new century that modernism had encountered – brought no immediate disruption. Indeed, a listener might have great difficulty in identifying, on internal evidence alone, an unknown piece as belonging to the first decade of the twenty-first century rather than the last decade of the twentieth, or even the last decade but one, possible two (2010: 409).

The fact that composers assume they are no longer associated to a given aesthetical alignment shows their pluralist attitude. This trend is revealed in the possibility of constantly redefining the concept of style. The absence of a single musical culture is thus seen as the creation of a concept of global culture occurs, where several participants defend an eclectic aesthetical position. This characterization is analysed by Pinho Vargas (2008), who states the “plurality of simultaneous directions” as a trait of contemporary aesthetics, claiming that “there are no certainties, there are problems”.

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This research falls within the scope of performance analysis of the repertoire composed in the first decade of the 21st century. Its analytical approach shall incorporate this trend of contemporary music repertoire, which is overwhelmingly characterized by a diversity of stylistic and aesthetic trends. This fact is understood as creating specific performance approaches. These specificities intersect with the permanent challenge that performers face when they are approaching new codes – when it comes to interpreting music from the past of western classical repertoire, the performer has already acquired a reference, which helps to decode score. On learning a contemporary composition and assimilation of its specific codes, pianist Charles Rosen comments:

[i]t takes more effort, more willpower, to arrive at an understanding of its language. The first time I played any twelve-tone music was in 1952, three short pieces of Milton Babbitt for which I had only five days to prepare in Paris before performing them on a brief tour of Switzerland [...]. I practiced the first piece, which lasts about three minutes, for four hours on the first day. The next morning when I returned to the piano, it was as if I had never seen the piece. I was in despair, full of self-doubt and even in panic. The third day it clicked and I learned the two other pieces rapidly (2002: 226-227).

Although Rosen refers to an older piece and not to the one under analysis, this quote highlights the difficulty that a performer feels when approaching a code with which he is not familiar: we can thus see that the interpretative specificities of contemporary music are intertwined with the unfamiliar semiotic registers the performer deals with.

In this paper, one intends to construct a performance analysis, considering Cook's conceptualization as paramount, as the musicologist suggests that performers should think more in terms of musical results, and not so much in the score (1992: 362-363). Cook alludes to the association between the image a score evokes and its interpretative conception, mentioning the high number of analyses Stockhausen's *Klavierstück III* generated. Considering the rhythmic complexity, the musicologist proposes resorting to imagery:

But whether they are right or wrong in this sense, none of these analytical approaches is going to tell us much about the way the music is experienced. If we want to know more about that, then for all that it matters the music may be some kind of transcription of the Cologne telephone directory. We have to think about what the music does to us rather than how it came out. We need to describe it rather than speculate about it (idem: 356-357).

Continuing with the conceptualization on the relationship between the performer and the score, it is intended to stress the difference between notation and the musical result through semiotic contextualization, as Cook states:

[i]n short, (...) notation shapes music in the act of representing it, and so the relationship between writing and playing or hearing can never be direct and unmediated. For one thing, while there are elements of the iconic in conventional notations – elements that map more or less directly from the score onto actions or sounds – they are both limited and channelled by symbolic elements, that is, elements whose meaning is contextual and historically contingent. An icon is after all a sign, and as such part of a larger semiotic economy (2013: 286).

The enrichment of the interpretation through performance analysis is intertwined with a concept of connection between performance practice and analytical musicology establishing the performer as a researcher, which is substantiated in Dogantan-Dack's formulation (2015: 103). Advocating that methodologies of research and performance are under development

regarding their instrumental capacities, on the mastery of multiple theoretical contexts and the analysis of the available documentation, the researcher claims:

[t]here are various kinds of processes involved in developing a performance interpretation. Whether a musician's approach is mainly analytical holistic or intuitive serialist – or a mixture of these (Hallam, 1995) – and whether one's aesthetic goal is faithfulness to the composer's intentions or not, interpreting by definition involves personal decision making (Dogantan-Dack, 2015: 189).

The construction of an interpretative script based on a personal narrative created through the performance analysis is thus intended. This perspective shall be based in two main axes: the composition assumptions and interpreter's imagery.

In order to build an interpretative imagery, and considering that there is a fundamental connection between songs of the Portuguese traditional songbook and the two pieces in this case study, the use of intertextuality is viewed as a practice-based research tool.

Intertextuality was widely developed in literary research, and afterwards spilled over to other knowledge and artistic fields. Reis' vision clarifies this:

[t]he concept of intertextuality arises from a dynamic conception of the literary text, an entity within the wide textual universe (which encompasses both literary and non-literary texts) functioning as a space for dialogue, exchange and constant interpenetration of texts in other texts. The term "logosphere", proposed by Roland Barthes, very suggestively conveys the sense in which this intertextual world of languages can be thought, where the literary text is activated (2008: 185, author's translation).

The author highlights the "dynamic, interactive and multiple discourse dimension inherent to intertextuality". Calling on the premise of the construction of a personal narrative, a connection is found with Panagiotidou's thought (2011: 175), on the assertion of intertextuality interpretation as an individual's act:

[t]he text, on the other hand, is a static entity, a constant to which all individuals have access alike. Its elements remain the same regardless of who approaches it. Its existence is a precondition for the emergence of intertextual frames, since they cannot surface without textual cues. However, what changes in the case of intertextuality is the different words or phrases will attract the attention of different readers and act as triggers for different types of intertextual knowledge. Consequently, one can suggest that, despite its importance, text assumes a secondary role allowing the individual to occupy the prominent position. It is the background knowledge of individuals that determines the possible intertextual connections (Reis, 2008: 188).

The analytical approach to intertextuality proposed for this case study, which shall intertwine several perceptual levels of the interpreter, the text of each original song to the piece in question, the suggestive coordinates present in the composer's programme notes, the analysis of the musical construction of each piece within the interpreter's individual perspective, identifies the analogy as a fundamental in this interpretative process. Zbikowski frames the analogy as a fundamental element in creating meaning within musical thought:

As such, analogy is an essential part of the substrate of cognitive processes that are fundamental to the kind of meaning construction that is associated with metaphor (and, for that matter, metonymy and synecdoche). Perhaps most important for the perspective on musical grammar developed in this volume, analogy provides an ideal framework for understanding how

sequences of patterned sound can, independent from language, create meaning and thus shape humans' cultural interactions (2017: 55).

We propose to consider this premise on a broader perspective, suggesting the sound analogy is not restricted to the identification of specific musical cells, but rather considering the possibility of identifying other compositional resources as contributory to the same cognitive procedure, namely through the use of semiotic content and its association to the sound.

Performance Analysis: *Sedoso* and *Saudoso* as a case study

Both works *Sedoso* and *Saudoso* are presented as case studies. The two pieces belong to Eurico Carrapatoso's 2007 composition *Espelho de Alma (Mirror of the Soul)*, written for string trio and piano. This work is a set of harmonisations of songs from a Portuguese traditional songbook, it is an inspiration source recurrent in his work. As described by Carrapatoso:

[i]t's about identity. It's thus about soul. It's about everything that is essential, presented under the guise of a poliphthyc on a symmetrical centrepiece, as if it was a mirror. And, just as images projected on a mirror, not only are the most hidden senses revealed, those in bas-relief, but also the embossing of the traditions, the mountains of affection, the barometer of emotions, the orography of feelings. Yes, the soul is the orography of life, with its highs and lows. The soul is that ellipsis going from Eterno to Materno, from Pírrico to Pícaro, from Sedoso to Saudoso, anchored in Careto, the mask, that two-headed pillar which is our own projection in the crudest, most instinctive drives, those drives the great Francis Bacon (1909-1992) so often and so brilliantly vaunted in his paintings. (2007: 5²).

Carrapatoso establishes a semantic connection between the composition title and a mirror construction and a portrait of his cultural roots, which defines the work's whole structure, as seen in Figure 1:

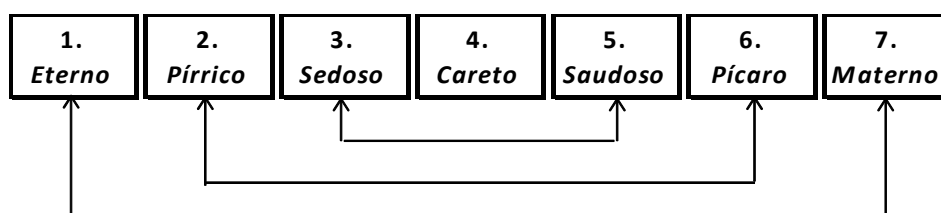


Figure 1. Correspondence between the pieces.

Espelho da Alma has as starting point the Portuguese collective imagery, based on songs from the popular culture, as well as a metaphoric content structure patent in the title. In the case of the two songs under analysis, *Sedoso* comes from the song *Olhos pretos* (Carrapatoso, 2007: 4) and *Saudoso* from the song *Terra do bravo*.

It is not intended to present an exhaustive analysis of the pieces, but to emphasize the analytical elements deemed necessary to recall the stated principles, anchored in

² Author's translation.

intertextuality and thus in analogy. A brief structural analysis was included, aiming to promote a better understanding of the analytical thought used.

*Sedoso*³

Olhos pretos [Black eyes]
 Olhos pretos são gentios [Black eyes are gentile]
 São gentios, são gentios da Guiné (bis) [They are gentile, are gentile from Guinea (bis)]
 Ai da Guiné, por serem negros [Oh from Guinea, as they are black]
 Por serem negros, gentios por não ter fé! (bis) [As they are black, gentile as they don't have faith! (bis)]
 Os teus olhos cheios de ardor [Your gaze filled with passion]
 Ai quanto amor diz à gente com o olhar (bis) [Oh how much love is bared in the gaze (bis)]
 Ai olhos pretos do meu encanto [Oh black eyes that charm me]
 Ai quanto pranto tu fizeste derramar! (bis) [Oh the tears you have had shed! (bis)]

The instrumental constitution of the piece *Sedoso* excludes the cello, and it includes violin, viola and piano. As one can see in Figure 2, it is structured in three sections, where the melodic strategy corresponds to a strophic structure with the 1st and 2nd sections corresponding to two stanzas, and the 3rd section is a repetition of the 1st stanza, without resorting to repeating verses. From the 2nd tempo of bar 45, the coda is composed by a citation of the theme of Debussy's prelude *La fille aux cheveux de lin*, mentioned on bars 47 and 48. This citation is twice announced before, on bars 5 and 6 and on bars 10 and 11, by the viola and by the piano, and omitted in its corresponding 3rd section, bar 41, only to be highlighted from the second tempo of bar 45.

1st section 1st stanza	2nd section 2nd stanza	3rd section 1st stanza
(bar 1 through 3 rd tempo of bar 19)	(4 th tempo of bar 19 through 3 rd tempo of 37)	(without bis) (4 th tempo of bar 37 to bar 48)
melody vl - vla: 1 st v. vl - vla: 2 nd v.	melody vla - vl: 1 st v. vla - vl: 2 nd v.	melody vla: 1 st v. vl: 2 nd v.
pn arpeggios (semiquavers): 1 st v. vertical texture: 2 nd v.	pn arpeggios (sextuplets) + descending basso ostinato	pn = to 1 st stanza coda (3 rd tempo of bar 45 to bar 48)

Figure 2. *Sedoso's* structure⁴.

³ Idem.

⁴ **Abbreviations.** vn – Violin; vla – Viola; vl – Cello; pn – Piano.

In the 1st section, the harmony, always performed by the piano, has a rhythmic configuration of semiquavers at the right hand and of quavers at the left hand, modified on the 2nd verse, which is associated to a texture option: the piano a web of voices based on the main theme. The piano part corresponding to the 1st verse, done in a constant rhythmic movement and in upward and downward arpeggio motions, was performatively thought as a gesture similar to that of the barcarolle, in which the arpeggios are done in a circular and expressive motion, in a well worked expressive tone kept within a secondary sound plan, over which the violin and the viola weave a performative idea of declamation.

In the 2nd section (Example 1), the piano follows a downward line, cyclically repeated, with a staggered movement between both hands, and a harmonious development in sextuplets is added. This movement of the downward lines with half-notes figuration was performatively determined as a *passacaglia*. The musical enhancement of this switch between high and low register and it is an enriching interpretative element, but also a critical rhythmic support for the group, as in the transition between sections, one detected the possibility of generating some instability which would compromise the cohesion of the pulse.

Example 1. The beginning of section 2.

Sedoso has many notes leading to the exploration of an intense expression: *dolce*, at the short piano introduction, changes in tempo (*ritenuto* immediately followed by *a tempo*), as well as

several suspensions, as for example in bars 4, 9 and 14. These expressive resources lead to an idea of *rubato*, exemplified on bars 2 through 4, and 7 through 9. The 2nd section is filled with indications of small *crescendos* and *diminuendos*, which also suggest the need for special care when conducting the expressivity. The dynamic indication is quite intimate in the 2nd section than in the other two, with a difference between the 1st and the 3rd sections: the latter is more sweeping, maybe to highlight the lower register of the viola.

According to the composer, this play recalls the story of King Pedro and Inês de Castro:⁵

[...] this love melody from the Azores, both ingratiating and lyrical, full of inner desire, evokes one of our identity icons, chiselled in the love between Pedro and Inês de Castro. This tempo is smooth as Inês. That love became a myth in our collective memory. It is a memento of the Portuguese identity (Carrapatoso, 2007, author's translation).

The association between the reference to Inês and *Sedoso* may be the basis for the piece's performative plan, as well as the use of the citation made by Carrapatoso to the theme of Debussy's prelude *La fille aux cheveux de lin* in order to establish a musical environment analogy. This piano prelude occurs in an ethereal expressive environment that may be evoked on the environment created in *Sedoso*, namely in the small coda, in which it is mentioned three times, and is executed within a fading sonority, which is actually clear in the referred dynamic succession: *f* (bar 45), *p* (bar 47) and *pp* (bar 48).

Saudoso

Terra do Bravo [Land of the Brave]

Eu fui à terra do bravo [I went to the land of the brave]

Bravo meu bem [Brave my darling]

Para ver se embravecia [To see if I became braver]

Cada vez fiquei mais manso [I became more and more tame]

Bravo meu bem [Brave my darling]

Para a tua companhia [For your company]

E eu fui à terra do bravo [And I went to the land of the brave]

Bravo meu bem [Brave my darling]

Com o meu vestido Vermelho [With my red dress]

O que eu vi de lá mais bravo [The bravest I saw over there]

Bravo meu bem [Brave my darling]

Foi um mansinho coelho [Was a tame bunny]

As ondas do mar são brancas [The waves on the ocean are white]

Bravo meu bem [Brave my darling]

E no meio amarelas [And yellow in the middle]

Coitadinho de quem nasce [Poor of who is born]

Bravo meu bem [Brave my darling]

P'ra morrer no meio delas [To die in their midst]

⁵ Inês de Castro was a Galician lady who fell in love with King Pedro I, who reciprocated that love. As he was married, and also for political reasons regarding the succession to the Portuguese throne, this relationship was not welcomed by King Afonso IV, and Inês was tragically assassinated. This story is part of the Portuguese historic and cultural heritage, and a major theme for poets and playwrights, such as António Ferreira and Luís Vaz de Camões.

This is a play for piano and cello, an instrument which Carrapatoso (2007) claims to symbolize Pedro, just as *Sedoso* had claimed Inês as the main character: [...] the time has now come for Inês to bear witness to Pedro's theme, and all the longing (saudade) that the cello evokes (author's translation).

As shown in Figure 3, *Saudoso* is divided in three sections, bounded by the double bar on bars 18 and 27, to which corresponds a change of key signature from F minor in the 1st section to C minor in the 2nd section and a return to F minor in the 3rd section. The 2nd section is a variation of the 1st, and the 3rd section resumes the initial disposition, ending the piece with a small coda (bar 36).

1st section (bars 1 through 18) F m	2nd section (bars 19 through 27) C m	3rd section (bars 28 through 39) F m
introduction - pn 1st v. (2x) - pn + vcl	vcl melody 1st v. (2x) variation pn - harmony	1st v. 1st x pn 2nd x pn + vcl
2nd and 3rd vs. (2x) pn + vcl	2nd and 3rd vs. (2x) pn harmony	2nd and 3rd vs. (2x) pn + vcl coda
4th v. (2x) pn + <i>ecco</i> vlc		
5th and 6th vs. (2x) vcl + pn		

Figure 3. *Saudoso's* structure

The melody flows between the right hand of the piano and the cello in varied forms, sometimes melting in unison sharing the highlights, sometimes intertwining the phrases, and other times an instrument speaks and the other replies. On the small introduction of the piece (bars 1 and 2) the piano plays a melodic motive belonging to the original song, immediately repeated in unison with the cello (bars 3 and 4), as seen in Example 2:



Example 2. the integration of the melody between the piano and the cello.

In some moments, the piano begins and the cello joins it (bars 6 to 19). At other times, the piano has a melodic prominence with a brief comment from the cello (3rd tempo of bar 12), signalled in the score *come eco*, and then the cello resumes the phrase (3rd tempo of bar 14), with comments and phrase excerpts interpreted by the piano. On the 2nd section, the cello has the melodic lead, lasting until bar 28, when the previously described melodic intertwining is resumed.

The coda (bars 36 to 39) is based on a descending interval of major third belonging to the end of the 2nd, 3rd, 5th and 6th verses of each stanza (e.g. on the 1st and 2nd tempos of bar 8 on the piano and cello, and on the 1st and 2nd tempos of bar 10 on the piano). The interpretative recognition of this melodic script fulfils the performative goals of *Saudoso* as an essential tool for sharing expressivity. It's up to performers to create and highlight the convergence and the divergence between piano and cello as a means to score the intended musical speech, considering that the piano's harmonic resources are split between vertical harmonies, in a script of many voices, and harmonies obtained in expressive *arpeggios*.

Saudoso is a very expressive play, with *cantabile* interpretative guidelines, dynamics between *p* and *f*, and several indications such as *sognando*, *expressivo* (bar 11 on the piano and bar 14 on the cello), *ethereal* (bar 19 on the piano) and *dolce* (bar 22 on the cello). The use of the piano resonance is revealed by the indication of a sustained use of the pedal (a single pedal between bars 1 and 4) and reinforced by interpretative suggestions such as *lasc. vibr. tutti gli suoni* (bar 2) and *appena sentito* (bars 37 through 39).

The presence of several voices in the 1st and 3rd sections of this *Saudoso* evokes Carrapatoso's love for choral composition, which is primordial to support the interpretative idea. The most textured snippets require the sound of a *tutti* choir, which for the piano means a valuation of all the voices. The snippets of the solo piano suggest the image of a solo voice, which is

translated as a search of expressivity within a text being recited. The required character and all the expressivity indications, as well as the impressionistic ambiance of the last four bars, which disappear in resonance, all lead to an ethereal ambiance, as if eternalizing Pedro's love for Inês. The shared melody and intertwining of piano functions, and the comments to the melody that Pedro is singing, are performatively interpreted as Inês' interventions. Thinking about Inês as a character, she is dramatically closer or farther away according to the melodic disposition: sometimes Inês is a part of the discourse construction, other times she replies to that melody. The 2nd section proposes a scenario which only reveals Pedro, a role which falls upon the cello; the piano has simply an illustrative role. When building the ensemble, the pianist infers that sometimes symbolizes Pedro, other times replies as Inês, and yet others builds the background of the dialog.

Intertextual relationships between *Sedoso* and *Saudoso*

The aesthetic prevalence connection Carrapatoso has with his nationality is shown on the titles and semantic choices for each piece. One can also pay attention to the subtitle "*Espelho da Alma: Subsídios para o estudo de uma orografia musical portuguesa*" (*Mirror of the Soul: Contribution for the study of the Portuguese musical orography*), which shows this deep connection.

As the mirror construction of *Espelho da Alma*, above-mentioned, it is now time to identify the analogies that occur between the two scores under analysis, looking for a common thread in the construction of the performative narrative. It is thus necessary to identify the continuities and discontinuities between both pieces. The piano takes a role of a harmonic driving force intertwined with that of a melodic leading actor, with the goal of maximizing the expressivity among all participants.

Sedoso and *Saudoso* original songs are poems about love for someone. Although thematically asunder the love between Pedro and Inês, they show poetic ideas fitting the drama this couple lived through, and it is compelling to consider this linguistic bridge in its interpretative study. Phrases as

Ai quanto amor diz à gente com o olhar [Oh how much love is bared in the gaze] (2nd stanza, 2nd verse)

Ai quanto pranto tu fizeste derramar [Oh the tears you have had shed] (2nd stanza, 4th verse)⁶

in *Olhos Pretos* (*Sedoso*), have a content that could be sung by Inês, immersed in her love and tragedy. The nostalgia arising from the poem *Terra do Bravo* (*Saudoso*) also leads to the visualization of Pedro's nostalgia, prompted in the piece's title itself as well.

Conclusion

The intertextual relationships shown thus far are metaphoric relationships, which lead to the creation of the interpretative script, in the sense that they provide perceptions and the construction of a contextualization. This performance analysis allows the mapping of images

⁶ Author's translation.

from different intertwined contexts: the national collective imaginary embodied in the popular tradition and historic past, the western cultural ideology and the link to the past of Western classical music.

The mentioned resources complete a cycle of intersections among several levels of significance, leading to an interpretation towards the musical result. The above-mentioned cooperation between the performer and the composer was crucial for the interpretative construction, and in this case was based in two strategies: the use of documents that the latter provided and the interaction of the performer with the score. The analytic and, afterwards, performative result favouring the musical discourse was achieved through the balance between reason and imagination, present in specific facts as the score and its indications and in the resulting connection to the interpreter's inner reality.

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Tarrying with the negative? Contemporary music and the sublime

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Abstract. Positioning at its core the category of the sublime, the modernist aesthetic engenders a problematic relationship between music – characterised as a self-relating agent of nonrepresentational negativity pursuing on its own terms a powerful critique of the Western metaphysics of presence – and its embeddedness in cultural contexts. Susan McClary recently highlighted how in the last few decades a new generation of composers has arisen, which by still drawing on the modernist tradition nonetheless engages more directly with signification and the cultural inscription of music. On this basis McClary calls for rehabilitating the allegedly feminine category of the beautiful. Yet, is the beautiful the more apt category for aesthetically framing this artistic development? In my paper I explore the potential Slavoj Žižek’s theory of the sublime object offers for reading these recent developments neither in terms of a domesticated modernism nor as a return to the category of beauty.

Keywords: Sublime; Beauty; Slavoj Žižek; Jean-François Lyotard; Sublime Object; Thomas Adès; Salvatore Sciarrino; Kaija Saariaho.

On barricades and related mysteries²

Picking up again her old polemical stance from 1989 against the modernist aesthetic of the sublime dominating the avant-garde in the second half of the 20th century, Susan McClary recently highlighted how, in the last few decades, a new generation of composers like Kaija Saariaho, George Benjamin and Salvatore Sciarrino has arisen, which though still drawing on the modernist tradition, nonetheless engages more directly with signification and the cultural inscription of music (McClary, 2015: 32-33). On this basis McClary dismisses what she dubs “the lure of the sublime,” a fundamentally *male* aesthetic category promoting – from Richard Strauss’ *Salome* to the latest computer game – an escalation of violence mostly directed against women. Instead, McClary advocates rehabilitating the allegedly feminine category of the beautiful, thus relocating music’s essence within the anthropological boundaries of pleasure and opening it up for cultural diversity and contextuality. If Saariaho, Sciarrino, Benjamin etc. “have returned to techniques and sonorities pioneered by Messiaen, Boulez and others,” they nevertheless “openly acknowledge the expressive and rhetorical power” of this music and thus “humanize its post-tonal idiom, making its power intelligible to audiences” (McClary, 2015: 22; my emphasis). But, is the beautiful really a more fitting category for aesthetically framing this artistic development?

From a different perspective, more focused on re-reading the 20th century modernist experience *in toto*, Stephen Downes proposes in an essay from 2014 what appears to be a more viable solution. If more recent philosophers like Jean-Luc Nancy have outlined the

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² A previous version of this text has been published under the title “Sublime borders: Modernism, Music and the Negative” in *Perspectiva Filósofica* 44/3 (2017), pp. 59-72; see also (Bertola, 2018).

porous boundaries between the beautiful and the sublime, Downes unearths an entire tradition of aesthetic thinking, from Jean Paul to Friedrich Nietzsche, consistently intermingling the two categories and attempting, by highlighting their reciprocity, to elaborate ways of grasping – and at the same time debasing – their entanglement (Downes, 2014: 84-95).³ Shifting attention to the musical field, Downes very convincingly exemplifies his findings by considering the music of Francis Poulenc and concludes: “For Poulenc, the end was to establish a repertory of strategies that facilitated new musical variants - inversion, subversion, one might even say perversions - of those aesthetic qualities traditionally assigned to the beautiful and sublime” (Downes, 2014: 105).

This may wonderfully fit the aesthetic gist of Poulenc’s music; let’s nevertheless consider a brief example from one of the contemporary composers McClary seems to refer to, at least implicitly, in her essay. In 1994 the British composer Thomas Adès arranged François Couperin’s famous cembalo piece *Les barricades mystérieuses* for an ensemble of five instruments (clarinet, bass clarinet, viola, cello and double bass). It is, of course, an oddly peripheral example, a minor work and not an original composition, but the 20th century modernist tradition has deeply engaged with this task of re-arranging past works: From Stravinsky’s *Pulcinella* or *Le baiser de la fée* to Birtwistle’s *Machaut à ma manière*, we witness how the predecessors’ pretensions of beauty and formal closure, of pleasure and accomplishment have often been torn apart (ironically, melancholically etc.) or bent towards the troubled waters of “let’s pretend (nothing happened)” like in Richard Strauss’s *Tanzsuite from keyboard pieces by François Couperin*. Now, how do we account for Adès arrangement?

Adès doesn’t clearly frame Couperin’s piece in terms of the beautiful as an accomplished aesthetic experience (the muted strings and clarinets as well as the vanishing *pianissimo* in the last couplet confer a spectral, ghostly character to the piece, as if the music and the players aren’t really there, actually present), but neither does it transform the *trompe l’oeil* quality of the original piece into the source of a sublime sense of awe and pain or a self-reflexive statement in which music deconstructs itself, as in Anton Webern’s transcription of the *Ricercare a sei voci* from Johann Sebastian Bach’s *Musical Offering*. Nor can we detect any kind of debasement strategies aimed at entangling in a Poulenc-ian gesture our all-too binary aesthetic categories: no irony, no sentimentality, no rhetoric excesses, not even kitsch with a critical edge are at work here. At its most fundamental, what we perceive is only that something is slightly amiss, that the somehow pleasurable back and forth of the off-beat melodic line with its syncopated development sounds awry. And we promptly find ourselves asking what is actually missing what? Is it Adès’s arrangement, which here and there smoothly misplaces an internal voice, suddenly forgets the right harmony or inadvertently underplays the closure of a phrase? Or was this already in the original piece, which, after all, is entitled “The *mysterious* barricades”? A porous ambiguity, a dizzy feeling of a somehow enjoyable inconsistency takes hold of us: Pleasure, pain, melancholy, sublime?

What this arrangement makes poignantly clear, as we will see more clearly at the end of my paper, is precisely my point regarding Downes’ reflections, not specifically on Poulenc, but considered in their more general implications: If we want to overcome the binary opposition between the beautiful and the sublime, making way for a more sympathetic and less exclusivist reading of the 20th century musical experience and at the same time developing a more apt understanding of contemporary compositional developments, our focus should not

³ On this point see also Beech 2009. Beech highlights how contemporary artists “have taken pleasure and critical purchase from the confusion and collapse of the distinction between beauty and a vast range of its antonyms, such as ugliness, the banal, ideology, chaos, and so on” (Beech, 2009: 17-18).

lie on the entanglement, on the *jeux croisée* of the two categories. Instead we have to consider carefully that which Adès's arrangement makes so impressively clear, i.e. that behind the very dichotomy between the beautiful and the sublime and all the compositional strategies aiming at their debasement there is a gap. The awkward sense that an indefinable something is missing, not in the right place, permeating Adès' arrangement, effectively circumscribes that empty, meaningless space, that minimal distance, which the two categories of the beautiful and the sublime as well as their reciprocal opposition rely upon. And what is ultimately this empty space if nothing but the unfathomable void of the Real lying at the very core of Žižek's concept of the "sublime object"?

At its most fundamental, Žižek's concept of the "sublime object" is the result of a somehow counterintuitive theoretical move, conflating in the same breath the Kantian sublime with Freud's sublimation.⁴ What may appear to be some kind of truism in English is in fact nothing of the sort: Indeed, already at the etymological level, in German *das Erhabene* (the sublime) has nothing in common with *Sublimierung* (sublimation). And at a conceptual level, too, the intermingling of the two terms is a twisted one: What does the negative form of aesthetic pleasure Kant calls the Sublime, and which he defines as the pleasure arising from the twofold moment of a sensory and imaginative failure to grasp an event like an earthquake immediately followed by the re-assertion of our intellectual superiority through its subsumption under the category of infinity, have in common with that operation by means of which what is socially excluded *returns* to the subject in a displaced, socially acceptable form (arts, scientific work etc.), that operation Freud refers to as sublimation?

From Žižek's standpoint, the former has everything to do with the latter:⁵ Our entire social and individual life revolves around what he calls "sublime objects," i.e., mysterious, ungraspable "things" (persons, ideas, functions, items etc.) which precisely by being ultimately nothing more than empty signifiers canalize and focus our enjoyment, our libido and thus ultimately guarantee the experience of a "meaningful" universe. From "humanity" to "freedom", from "terrorism" to "*la Femme*" in the continuous shifts of their "ungraspable" meanings behind the stability of their names/appearances, all these sublime objects offer perfect because nearly bottomless vessels for the unstoppable, meaningless pulsing of our enjoyment. At the same time they nevertheless sublimate this very enjoyment by offering a point of reference, an ultimate authority to refer to, that "quilts" all the other signifiers and thus guarantees the existence of a meaningful life-world. Even if for instance there are dozens and dozens of conflicting and mutually exclusive definitions of "freedom" we all *feel* that this is what Western civilization is ultimately about, and we are prepared to engage ourselves (in very different ways and in different degrees) in its name.

With regard to aesthetics Žižek's theory of the sublime object thus not only accounts for the libidinal hold the aesthetic object exerts on us, but also it overcomes *en bloc* the opposition between beautiful and sublime: Sublime objects being empty, pure functional vessels capturing our enjoyment within the symbolic network, can indeed be aesthetically "beautiful" as well as purely negative, sublimely connoted objects (like timbre in the case of Lyotard and of the Darmstadt based musical Avant-garde of the 1950s and 1960s, as we will see in more detail farther into the text) and are often both at the same time.

So, in short, our task in trying to grasp what seems an odd, ambiguous intermingling of beauty and the sublime – like Adès in our example – is to directly address the gap itself, the Real lurking at the core of the sublime object. In a way, our critical task is nothing but simply

⁴ See in particular (Belsey, 2005: 141-148).

⁵ See in particular (Žižek, 1989: 201-209).

asking how 20th and 21st century music constructs this gap, this void continuously undermining and debasing our aesthetic experience of the sublime as well as the beautiful. How did different composers and aesthetic orientations envisage and deal with it? But what does this mean in concrete terms? And speaking of gaps, void, emptiness etc., i.e. putting a fundamentally negative magnitude at the core of our aesthetic endeavour, are not we in spite of everything still stuck within the old, modernist logic of the sublime, thus invoking (once again), mostly contrary to public taste, a renewed hecatomb of composers and compositional styles in the name of some abstract, chauvinistically male, fundamentally violent aesthetic category based on negativity like the sublime, as McClary would have put it?

To clarify my position let's take a brief, critical look at what, in many ways appears to be a fundamental moment in the aesthetic reflection on modernism under the guise of the sublime: I'm referring to what it is probably the most Lacanian and in a way most extreme formulation of aesthetic modernism, i.e. that of Jean-François Lyotard; a particularly intriguing formulation that at first raises hopes of, as McClary puts it, "a break away from the modernist trajectory," but in the end seems to have engendered a perverse dynamic by means of which – and I'm quoting McClary once again – a second generation of "Oedipal successors" arose, "which often felt the need to push the already distended envelope yet further in order to claim the right of ascendancy" (McClary, 2015: 23). So, how did Lyotard conceive that negative magnitude, that gap we intuitively referred to with our musical example? And, to put it bluntly, where did he go wrong?

The Thing and its discontents: Lyotard's Kantian sublime

If Robert Solomon was ever right in highlighting in 1991 a masochistic strain of modernism and asking if "is there any room left in our jaded and sophisticated lives for the enjoyment of simple innocence and 'sweet' affection" (Solomon, 1991: 13), then Lyotard's reformulation of modernist aesthetic fits this strain perfectly. So, how did it happen? The outstanding role Lyotard ascribes to timbre in his few but nevertheless quite substantial essays on musical subjects lies in the very fact that timbre appears to him, like nuance in painting, to be the stand-in for that paradoxical invoking of the unrepresentable within presentation itself the sublime feeling stands for.⁶ Timbre is nothing more than the inscription within the acoustic field of the *sublime* gap between reason and imagination, nothing but an agent of differentiation, a *différend*, continuously defying identification, continuously suspending the "active powers of the mind" and as such the very acoustic sign of modernity (Lyotard, 1991a: 140). As Lyotard puts it:

Within the tiny space occupied by a note or a colour in the sound- or colour-continuum, which corresponds to the identity-card for the note or the colour, timbre or nuance introduce a sort of infinity, the indeterminacy of the harmonics within the frame determined by this identity (1991a: 140).

So, at first sight, we are dealing here with a postmodern form of sublime, fundamentally open, rejecting formal closure. Nevertheless, it seems to me that particularly when it comes to music something like an unresolved tension within Lyotard's conceptualization of the sublime and of its ties to the avant-garde becomes particularly conspicuous. Indeed, at the very end of the essay *Obedience* (a title which, by the way, already says something about masochism),

⁶ On this point see also (Leipert, 2012).

Lyotard quotes approvingly the following lines from Giacinto Scelsi's short text *The Look of the Night*:

There is also another music of a transcendental character, which escapes all analysis of its organization, as it escapes all human understanding. Certain privileged beings have heard sounds, melodies and harmonies that can be described as 'out of this world' (Lyotard, 1991b: 179).

Besides Scelsi's perilous concluding drift toward that kind of Hegelian "pure intuition" that Lyotard himself is always all too eager to criticize as the seminal moment of every form of totalitarianism, Scelsi's formulation clearly places true music, sound itself, in a noumenal region of transcendental unreachability. And this *noumenalization* of timbre as an unreachable beyond of pure sound-matter appears even more strongly in Lyotard's own formulations. In *After the sublime* Lyotard adopts Lacan's most *Kantian* conceptualization of the Real as *the Thing*, as "the beyond-of-the-signified" (Lacan, 1992: 54) and defines timbre as that "which is not addressed, what does not address itself to the mind (what in no way enters into a pragmatics of communicational and teleological destination)" (Lyotard, 1991a: 142).

The very fact that Lyotard uses Lacan's concept of the Thing here is intriguing: Soon after the seminar of 1959-60, where this notion first appears, Lacan almost entirely drops this notion, probably concerned about its all too Kantian implications. Indeed in the same years of the seminar Lacan explicitly warns in another text of the risks on somehow blurring together Kant's concept of the noumenon with his own concept of the Real. As he puts it:

This notion [of the Real, A/D] is not at all Kantian. I even insist on this. If there is a notion of the real, it is extremely complex and, because of this, incomprehensible, it cannot be comprehended in a way that would make an All out of it (Lacan, 2005: 96-97)

Even if Lyotard doesn't explicitly draw the two notions together, well aware of their fundamental incompatibility, nevertheless, to put the matter in Alain Badiou's terms, a "logic of purification" (Badiou, 2006: 26-28) is at work in Lyotard's conception of timbre as *inhuman* sound matter lying beyond our all-too-human experience; a logic that, even if it doesn't really "make an All out of it", nevertheless engenders a whole poetic of music as the act of freeing some kind of noumenal *inner life* of sound itself and with it an extreme defence of the autonomous, self-relating character of music and of the work of art. Even in his late essay *Music and Postmodernity*, Lyotard on the one hand openly criticizes the *grand récit* of the history of music as the progressive emancipation of sound. He acknowledges the embeddedness of timbre as inaudible sound-matter within immanence, affirming that "the inaudible is an act in the space-time-matter of sound" (Lyotard, 2009: 41). But on the other hand he's not interested in following up on or explicating how this intriguing embeddedness of the two planes concretely works. He never truly poses the question of how timbre/sound as the Real concretely interacts with music itself.

Precisely this noumenal understanding of sound/timbre forces Lyotard to structure his thinking along a series of aporias: the avant-garde is defined by successfully "causing the ear to sense sound-matter – timbre – freed from all destination" (Lyotard, 2009: 43) and thus it revolves around the aporia of "making heard that which escapes in itself all hearing" (Lyotard, 2009: 43, slightly modified). Music itself appears split between music *per se*, in its noumenal autonomy, what Lyotard calls *Tonkunst*, and its being there, as perceived by our phenomenal ears, in Lyotard's terms, *musique*. So, whenever the task is to account for the interlacing between the phenomenal as the space where sound happens and concretely resounds on the one hand, and its noumenal, transcendental roots on the other, Lyotard, like

Kant, has no other choice than to structure this relationship in the form of disjuncture, of an aporia between two distinct, non-communicating levels of reality.

In this way, Lyotard lays bare the Kantian roots at the core of the modernist sublime and their problematic consequences. As Slavoj Žižek puts it, the whole point of Kant's Copernican revolution basically consists in affirming "a transcendental gap," i.e. in Kant's acknowledgment that "every content appears within an a priori formal frame" (Žižek, 2014: 15-16), that the noumenon is out of reach, always-already missed in its being *an sich*, beyond the boundaries of our experience of the world even if it structures it. This perfectly captures the basic gesture of modernism itself, as practised – at least in their aesthetic statements – in the second half of the 20th century by composers like Boulez, Stockhausen, Varèse and Luigi Nono. Here the very impossibility of achieving the noumenal absolute (pure sound, time as such etc.) becomes the motor of their creative outburst; something that makes modernism an "unfinished project" doomed to keep going and endlessly missing its goal (Jameson, 2009: 61-62).

But this noumenalization of the gap is precisely what we don't find in the new generation of composers McClary refers to (nor in "older" composers like Poulenc or Satie, as Downes made perfectly clear): Even if they use the techniques of their modernist predecessors, here the gap is not a masochistic beyond, unabashedly demanding blind obedience, as Lyotard puts it. On the contrary, the gap appears playful, ambiguous, even mischievous in its ubiquity. So, I think that in order to aesthetically grasp what is going on right now, what we have to do is to consider what has proven to be the most fundamental step in Western thought over the last two centuries, namely the transition from Kant to Hegel. What do I mean?

Modernism: From Kant to Hegel

In the last two decades an entirely new interpretation of Hegel has been attempted by scholars like Catherine Malabou, Rebecca Comay, Fredric Jameson and Slavoj Žižek, aiming at doing away with the old interpretive clichés on the Jena philosopher. That very same Hegel who, in the works of Lyotard, Gilles Deleuze or Jacques Derrida appeared as the stand-in for *identitarian thinking*, for the everlasting (totalitarian) temptation of Western metaphysics to *square the circle* and to speak for the totality of being itself, this Hegel becomes in recent scholarship the very spearhead of a dialectic the ultimate goal of which is not the conciliatory gesture of *Aufhebung* but a reaffirmation of the power of contradiction. For instance, in an article from 2013 Rebecca Comay describes as follows what in the traditional (anti-)Hegelian *doxa* appears to be the very proof of Hegel's outdated and preposterous ambition to somehow speak on behalf of being itself, i.e. that concept of "Absolute Knowing" at the end of the *Phenomenology of Spirit*, in which the entire dialectical process reaches its own conclusion:

It's the Saturnine aspect of the operation that fascinates me. Sluggish, torpid, 'sunk into the night of its own self-consciousness,' Absolute Knowing digests what it encounters and secretes what it has assimilated as its own excrescence. [...] A moment of kenotic expenditure in which the speculative reversal from loss to gain is in turn reversed [...]. Could such an undecidable figure—the very figure of indecision—make its comeback as the final figure of the dialectic? (Comay, 2013: 144-145).

Instead of an affirmative, "identitarian" synthesis we suddenly face in Comay's interpretation of Hegel's Absolute Knowing its very opposite, an uncanny reversal, in which it seems we have been suddenly thrown back to the very chaos the entire dialectical process began with.

But what does this *un-decidability* breaking through at and as the end of Hegel's dialectic mean in concrete terms?

If Kant affirms the existence of a noumenal, transcendental formal frame, laying beyond the boundaries of our experience of the world but nevertheless structuring it, the proper Hegelian move in dealing with such a Kantian frame resides precisely in shifting this transcendental gap a step further: What Hegel ultimately accomplishes with his own philosophy is, according to Žižek, to affirm that “the very gap between content and form is to be reflected back into content itself, as an indication that this content is not all, that something was repressed/excluded from it” (Žižek, 2014: 15-16). The basic gesture of Hegel's dialectic thus consists not in a (totalitarian) glimpse into the noumenon in itself, but in revealing how this noumenon is per se barred, caught up in an internal antagonism. Or, to put it another way:

When Kant asserts the limitation of our knowledge, Hegel does not answer him by claiming that he can overcome the Kantian gap and thereby gain access to Absolute Knowledge in the style of a precritical metaphysics. What he claims is that the Kantian gap already is the solution: Being itself is incomplete (Žižek, 2004: 45).

At this point it becomes clear that the passage from Kant to Hegel advocated by Žižek implies within the aesthetic sphere the very opposite of what Lyotard identified as the fundamental gesture of every true aesthetic (post-)modernism, i.e. that *jubilation*, that “making us discern the unrepresentable in the writing itself, in the signifier”, Lyotard saw as paradigmatically embodied in James Joyce's work. The point is not to challenge the form in order to express by means of a sublime feeling the unrepresentable content (the inhuman Thing), but to reveal the very split between form and content *as the inherent property of the content itself*. Here the Kantian noumenon wrapped in its own transcendental self-sufficiency becomes that *undecidable figure* Hegel's Absolute Knowing is concerned with. Ultimately, to put in more Lacanian terms, we have “traversed the fantasy” of the sublime object itself or, as Žižek puts it: “to ‘unmask the illusion’ does not mean that ‘there is nothing to see behind it’: what we must be able to see is precisely this *nothing as such*” (Žižek, 1989: 195).

And, to conclude, is this not what we ultimately get in Adès's arrangement of Couperin's cembalo piece? As we saw at the beginning of my paper, Adès's refined instrumentation doesn't convey the sense of a trans-historical sound event sublimely shimmering through the texture of Couperin's phenomenal music or breaking/deconstructing from within the original logic of the piece. There is no dynamic tension between some unaccomplished surface and an unreachably deeper truth at work here. But the arrangement neither reconstructs Couperin's work in terms of a self-assuring, pleasurable sense of closure, celebrating the beauty of an – at least in the arts – accomplished finitude (the rococo dreams of denial in Strauss's own engagement with Couperin). Instead, what we confront here is an utterly open space of inconsistency or, to put it once again in more Lacanian terms, a – indeed feminine – non-All, a twisted space, troubled by some missing object, by a gap, but a gap that – unlike Lyotard's – has no consistency of its own: What we become able to hear here it is “*nothing as such*”.

Like the traumatic event in Freud, the ontological consistency of this gap is only that of a fantasmatic reconstruction *après-coup*, of a retroactive formation the reality of which (Did it really happen? And did it really happen *this way*?) is continuously under scrutiny. The wonderful blurring together of Couperin and Adès throughout the piece impressively exemplifies this point: The gap, the weird sense of something missing, relentlessly dances back and forth between Couperin (the off-beat melody, its syncopated development) and Adès (the muted instruments, the modernist fragmentation of the melodic line redistributed between different players etc.). The gap becomes a porous, ubiquitous something, metamorphosing

in a plethora of symptoms we can no longer ascribe to one source or another. Ultimately, what we acoustically confront here is our being caught up in an imperfect finitude, unable to fully fit the pure immanence of nature, to be a meaningful part of any cosmos whatsoever, nor to subscribe once again to those sublime pretensions of transcendental *erlösung* that culture unabashedly upholds despite everything. And precisely this void, this “Real” zone of indecidability, neither beauty nor the sublime, is what, in my opinion, the more recent compositional developments McClary refers to in her essay are trying to map out.

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Size Does Matter: Microtonal Harmonic Distance as a Structural Determinant in Just Intonation

James Dalton¹

Abstract. Historically certain aspects of just intonation such as the commas, *diesis*, and the need for more than one size for some common intervals, have been viewed as flaws in the system. Many theorists and composers believed these to be insurmountable obstacles to its use, choosing various temperaments such as meantones, well-temperaments, and, more recently, microtonal equal divisions of the octave. Even Harry Partch, who championed the use of just intonation, limited the number of pitches in an effort to keep his palette manageable. Recently, some composers have chosen to make these issues into features of their compositions rather than avoid them. Since the late 20th century composers such as Ben Johnston and Lou Harrison make these features into structural and expressive devices and use them to delineate form.

Keywords: just intonation; microtonal; syntonic comma; Free Style; Lou Harrison; Ben Johnston

Introduction and Historical Background

Most composers and theorists of the past few centuries have considered some aspects of just intonation to be flaws that precluded its use. In this article, I will explore ways that some late-20th-century American composers have exploited these as essential features of their compositions.

Just intonation is distinct from other tuning systems because it is non-tempered. Just intervals are derived from the harmonic series and often expressed as ratios. You can think of the ratios as describing an interval between two members of a harmonic series, for example, $3/2$ represents the interval between the third and second harmonics of a fundamental represented by the integer 1. $15/8$ represents the interval between the fifteenth and eighth harmonics of a fundamental represented by 1, and so forth. For a variety of reasons – musical and practical – composers and theorists have found that tempering or compromising these intervals by tiny amounts provided a solution that kept the required pitches to a manageable number, especially for fixed pitch instruments such as keyboards, mallet percussion, and fretted stringed instruments. This is where the various mean-tones, circulating or well temperaments, and equal temperaments come into play.

David Doty gives one of the clearest definitions of just intonation. He calls it, “any system of tuning in which all of the intervals can be represented by whole-number frequency ratios, with a strongly implied preference for the simplest ratios compatible with a given musical purpose” (Doty, 1994: 1).

A “given musical purpose” in a just intoned composition could vary from composer to composer and from piece to piece, but to give one example that is fairly common, we will

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need to touch upon the issue of “prime limits.”(Doty, 1994: 27) In music-mathematical terms, a prime limit is the highest prime number used in a set of ratios. The historical tuning common in Europe before the Renaissance was 3-limit or Pythagorean tuning. All the ratios could be formed using only the primes 2 and 3. Musically, this meant that all the intervals could be derived by combining and stacking octaves (2/1) and fifths (3/2). This resulted in a major third of 81/64 (called the *Pythagorean ditone*) rather than the simpler and arguably, more consonant 5/4.

When later composers began to use the major and minor thirds as consonances, they needed to accept intervals of the 5-limit in order to get major thirds of 5/4 and minor thirds of 6/5. Hence, in a 3-limit context a major third would be 81/64 but in a 5-limit context, a major third would be 5/4. Common practice never fully accepted the move to the 7-limit and beyond, though a number of musicians advocated for these changes to little or no avail. Since the mid-twentieth century, though, more composers have availed themselves of these resources. Partch worked with an 11-limit gamut and other composers used limits of thirteen and above in their works. Each of these different prime limits would add different available options for our familiar intervals as well as some for which our 12-note equal temperament system (12edo or “12-tone equal division of the octave”) gives no adequate approximation.

Interval	12edo	Just Intonation (to the nearest cent)
P8	1200¢	1200¢
P5	700¢	702¢
P4	500¢	498¢
M3	400¢	386¢
m3	300¢	316¢

Table 1. A table comparing some common equal tempered and just intervals.

The 5-limit just major 3rd is ~14¢ lower than in 12edo and the Pythagorean ditone obtained by stacking perfect fifths is ~8¢ higher than in 12edo. The difference between these is ~22¢ (actually closer to 21.51¢) and is called the syntonic comma or the comma of Didymos (first century C.E.) who was one of the earliest theorists to choose the just major third (5/4) over the Pythagorean major third (81/64). The difference between these is 81/80 which is another way to express the syntonic comma. This and other classic tuning discrepancies have been called “the historical tuning problem.” (Polansky, 2009: 74) Mathematically, it can be explained by the fact that the numbers in question, 3 and 5, are primes and no power of 3 will ever equal any power of 5. Stated musically, stacks of perfect fifths and those of major thirds will never coincide in just intonation.

The syntonic comma and the issues surrounding it have been known and examined by theorists since antiquity. We will focus for the moment on one aspect – commatic drift, which is the shifting up or down by the distance of a syntonic comma when certain passages are executed in just intonation by voices or flexible-pitch instruments. This has been a commonly discussed issue since the Renaissance. One of the most straightforward examples comes from Christiaan Huygens’ *Cosmotheros*:

...if any Persons strike those sounds which the Musicians distinguish by these Letters, C, F, D, G, C by these agreeable Intervals, altogether, perfect,

interchangeable, ascending and descending with the Voice: Now the latter sound C will be one comma or very small portion lower than the first sounding of C. (Huygens, 1698: Book I, They have Musick)

He then shows the math:



(modern practice puts the larger number first: 81/80)

Figure 2. Huygens' commatic drift demonstration

and he states that if this passage is repeated nine times the resulting C would be nearly a whole tone lower and adds:

But this, the sense of the Ears by no means endures, but remembers the first tone, and returns to it again. Therefore, we are compelled to use an occult Temperament, and sing these imperfect Intervals, from doing which less offence arises. And for the most part, all Singing wants this Temperament... (Huygens, 1698: Book I, They have Musick)

Many composers and theorists in the 20th and 21st centuries have used a lattice to visualize tonal space. A common form of the just intonation lattice is shown below. The prime number 3 (perfect fifth) is represented on the horizontal axis while the prime number 5 (major third) is shown on the vertical axis. The lattice theoretically extends to infinity in all directions (Tenney, 1983: 24):

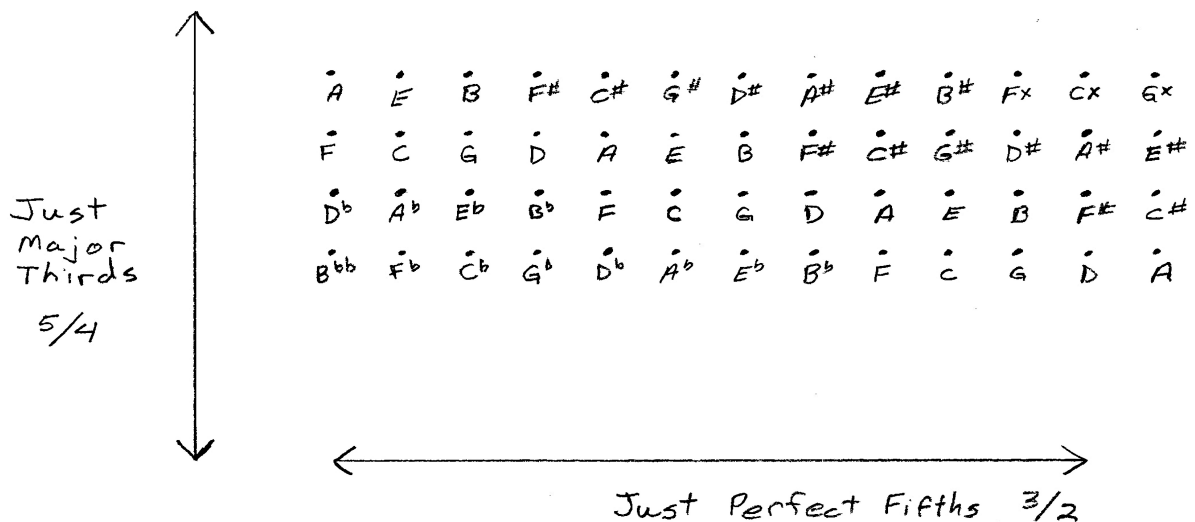


Figure 3. A portion of the 5-limit JI lattice.

Pitches with the same name on this lattice actually vary by syntonic commas. For example, the C on the bottom line of this lattice is the highest, with each higher line containing a C that is one syntonic comma lower than the previous line; the same holds for all pitches.

We can demonstrate the commatic drift of Huygen's example on a portion of the lattice. The superscript numbers (called "Eitz notation") show the comma relationship to the starting pitch:

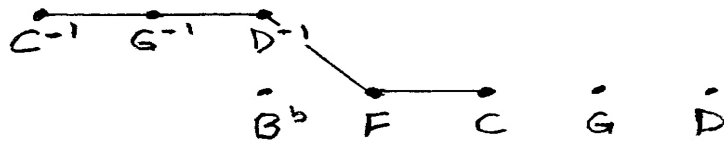


Figure 4. Lattice for Huygens' demonstration.

Notice that it is the third from F to D (actually D^{-1}) that drives the drift. The shift to a different plane on the lattice is because the minor third ($6/5$) is an interval of prime 5. In a Pythagorean tuning (a chain of perfect fifths, that is 3-limit), the move from F to D would have been on the same straight line (to the D at the right of the lattice portion) but this D would be less consonant, out of tune by a comma. The example would have ended at the same pitch with which it began. Equal temperament works in a similar way to Pythagorean but with all of the intervals tempered - P5ths smaller by $\sim 2\text{c}$ and the m3rd from F to D, smaller by $\sim 16\text{c}$.

In a series of letters to Cipriano de Rore around 1563, Giovanni Battista Benedetti discusses the same issue and gives examples of both rising and falling commatic drift (Reiss, 1925). Here is the rising example:

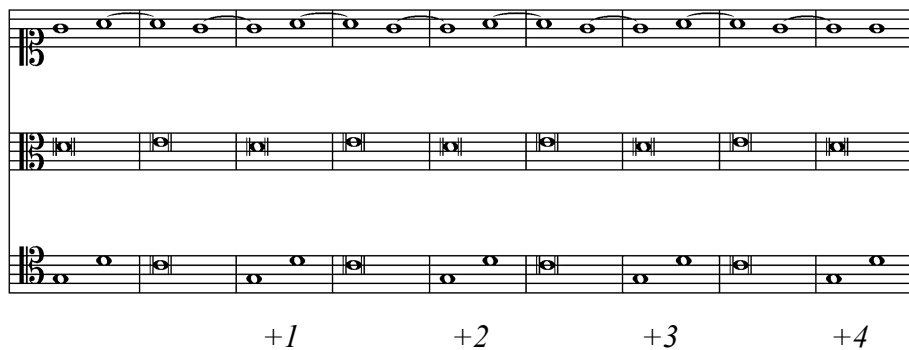


Figure 5. Benedetti's demonstration with comma displacement below staff.

The tied A causes the C in the bass to be a comma higher. Tuning the next G to that pitch requires it (the G) to be higher by a comma as well. Here is a lattice for it:

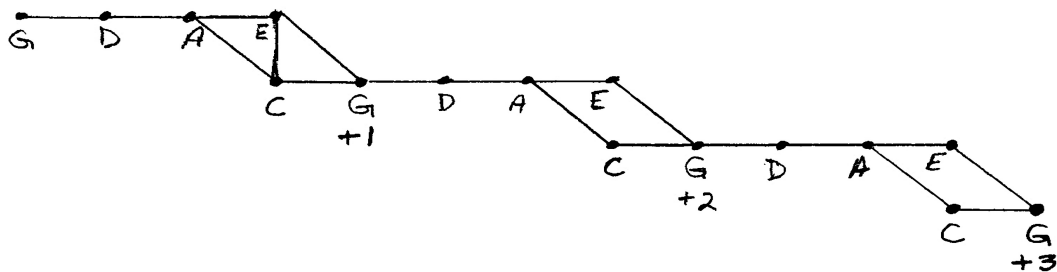


Figure 6. Lattice for Benedetti's demonstration.

For each repeat the lattice would move to the right in the same manner indicating the rise of a comma. In this case, the interval that drives the commatic drift is the major sixth. Being the inversion of a third, it is still an interval of the prime 5.

Benedetti states that the result is *odiosa esset sensui auditus* (“odious to the aural sense”) and recommends tempering out the comma (spreading it over several fifths) as a solution.

There are many other examples discussing this issue including an article by physicist Max Planck (Planck, 1893) and a letter from A. H. Fox-Strangways to Harry Partch (1974).

What unites all these analyses is the general dismissal of just intonation based on this one problem. They essentially all say either (1) that we must use temperament to avoid the problem or (2) that singers and players would adjust to avoid the effect instinctively. Max Planck encourages conductors to be aware of the issues and choose wisely. At the end of his article he holds out hope that a genius who speaks the language of just intonation better than any others might cause it to play a greater role in music in the future.

Ob die natürlichen Stimmung künftig einmal eine bedeutendere Rolle in der Musik zu spielen berufen ist, als jetzt, vermag heute Niemand zu sagen. Sicher ist nur das Eine, dass dies nur dann geschehen wird, wenn ein Genius ersteht, der in der Sprache der natürlichen Stimmung mehr zu sagen weiss, als in irgend einer anderen; ihm würde gewiss kein principiellles Bedanken Stand halten.² (Planck, 1893: 440)

Case studies

In this article, I will examine the works of two late 20th century American composers who were influenced by Harry Partch (1901-1974), but each created their own individual approach to just intonation. Lou Harrison (1917-2003) found interest in just intonation sparked by his reading of *Genesis of a Music* (Partch 1949) which he read on the recommendation of Henry Cowell. Partch’s idiosyncratic approach to just intonation became a dominant influence among Americans drawn to just intonation and other forms of microtonality. Harrison was among the first to carry the banner of just intonation, which he did with the zeal of a convert.

Ben Johnston (b.1926) intended to study with Partch but the latter’s aversion to teaching made the situation more of a master/apprentice relationship. Partch’s music was primarily created for his unique instrumentarium born of his abilities as a woodworker. Lacking those skills, Johnston turned to writing for standard orchestral instruments and retuned pianos. In particular, his ten string quartets represent an impressive achievement even though several of them did not receive premiers or recordings until just a few years ago from the able hands of the Kepler Quartet who have performed and recorded the complete set.

In his string quartets, Ben Johnston explores just intonation through a multiplicity of techniques, including serial procedures, control of tonality by prime limits, and a number of creative and personal approaches to form. In 2006 Johnston wrote of one of his fundamental artistic concerns:

In more recent works I have been attempting to ask myself — and to answer in my compositions — such questions as: what would the music of Ars Nova and subsequent Renaissance polyphonic music have been like if not only sharps and flats but also the microtonal interval of the syntonic comma had been a conscious and deliberate part of a composer’s palette? That one I

² Whether just intonation will in the future again be called to play a significant role in the performance of music, no one can say today. Just one thing is certain: this will happen only when a genius arises who has more to say in the language of just intonation than in any other. In that case, he would not be stopped by any principle. Author’s translation.

tackled in the first movement of String Quartet No. 9. In its third movement the question was: what if Beethoven had been observing just such niceties in composing a slow movement for a string quartet? (Johnston, 2006a: 19)

Although throughout most of history commatic drift has not been an intentionally audible feature of Western music, Johnston makes it a structural and expressive device in the third movement of his ninth quartet. See example 9.

A few words about Johnston's notation will help to elucidate. He uses Ptolemaic just intonation (also called Syntonic diatonic) as the basis. The seven letters A through G with no accidentals represent a C major scale in this intonation represented here by a portion of the just intonation lattice.

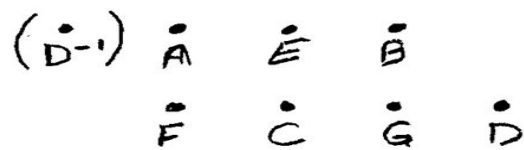


Figure 7. Ptolemaic just intonation, the root of Johnston's notational system.

The D at the bottom right is tuned as a 3/2 perfect fifth above the G. The D- is a syntonic comma lower (Johnston uses + and - to represent the syntonic comma) and is a perfect fifth from A.

As vibrational ratios:

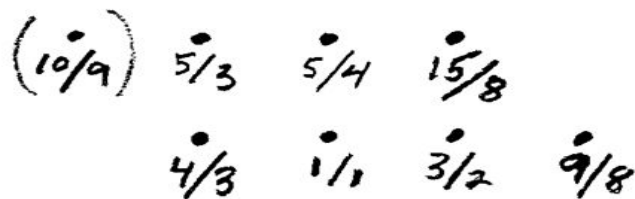


Figure 8. Ptolemaic JI in ratio form.

These ratios apply to any major key in this intonation. Since Johnston bases his notation on C major, the Bb- chord in measure three is diatonic to a Ptolemaic F major. Bb- is, in fact 4/3 (subdominant) in the key of F. The first four measures are a fairly traditional type of key-establishing progression. Partly because of the harmonic palindrome (V-I-IV-I-V) from the third quarter note of measure one to measure four, the tonic does not drift at this point.

The key to the controlled commatic drift is the difference between the large major second (9/8) and the small major second (10/9). Johnston chooses his second degree based on its relation to the preceding pitches. The drift becomes audible at measure six – note the g-harmony. It drops another comma in the next measure (g- -). There is a secondary dominant (V7/vi) at the point of greatest tension, a tension that derives more from the pitch nadir of the Key of F- - than from the simple chromaticism.

Johnston then brings us back over four measures from F- - to F- to F. and then a half cadence in measure fourteen. The subsequent fourteen measures repeat essentially the same progression varied melodically terminating in an authentic cadence. The overall form is ternary. The middle section begins in the key of g- (10/9 above the tonic F) and back to F before the return of the first theme in the last section, which is varied by the addition of

sixteenth notes in the second violin and viola, increasing the tension by using pitches based on the seventh and thirteenth harmonics (prime numbers 7 and 13).

The section of score included in example 9 represents, with some variation, all but the middle section of the movement. Johnston has a new approach to form here in which the drift of two commas away and back to the original tonic for the cadence delineates the simple structure in a new and rich way. Traditional techniques of melodic motion, harmonic progression, and cadence are enhanced by the addition of this intonational movement. Rather than avoiding the drift of a syntonic comma, he celebrates it and puts it at the service of the form.

Johnston said, “the paradigm upon which the behavior of tones in Western art music rests is radically altered in important ways when tempering is brought to bear upon it” and “...the confusion of spiral designs with circular ones is a radical change of symbolic meaning” (Johnston 2006b: 168). In his music, he attempts to restore, or at least illuminate, the original paradigm.

Slow, expressive ♩ = 66 III

N.B. Not open string C, which would be C.

Figure 9. excerpt from Ben Johnston, String Quartet #9, III.

Lou Harrison posited that there are two different approaches to composing in just intonation: “Strict Style,” defined as composing within a predetermined scale or gamut; and “Free Style,” which he described as composing in such a way that “you don’t have a preliminary concatenation of tones or intervals but a free association of intervals that you know and associate as you wish for artistic purposes” (Doty, 1987: 10). His concept of Free Style is recognized as a significant contribution to music theory (Polansky, 1987). Harrison composed just a few pieces using this technique between 1955 and 1974. At that time, practical matters of performance seemed almost insurmountable. Technological advances now facilitate both composition and performance of Free Style pieces. This, however, is still a poorly understood aspect of Harrison’s career and *oeuvre*. It is my intent to re-examine these ideas and clarify the meaning of the terms.

Among his pieces in Strict Style just intonation we can count all of the pieces that he composed for his struck-idiophone and “gamelan” ensembles; those for retuned keyboards such as the *Incidental Music to Cornielle’s “Cinna”* (1957); all of his works for guitar; and such pieces as *Concerto in Slendro* (1961) and the *Four Strict Songs* (1955), among many others.

When we consider the Free Style, we are presented with a very different story. Though he left several incomplete sketches, Harrison only composed three complete pieces in this manner: *Simfony in Free Style* (1955); *At the Tomb of Charles Ives* (1963); and *A Phrase for Arion’s Leap* (1974). This last one is only thirty-six seconds long. He, himself, admits to the complications involved in this kind of composition. In 1987, he was still unsure of the practicality:

... And so far as I know there’s still not an instrument that’s capable of doing that, either electronic or any other kind ...I would love to hear an extended piece. I have sketches for extended pieces in the free style, but there’s no way of doing it. ...After all these pieces have been extant for 25 years. That’s a quarter of a century. (Doty, 1987: 10)

At the Tomb of Charles Ives pays homage to the American composer, Charles Ives partly by reference to one of his more well-known works, *The Unanswered Question*. In this work, Ives uses a solo trumpet playing nearly identically repeated phrases over a slow-moving C major string background. The most obvious parallel in Harrison’s tribute is the repeated solo trombone phrase over an open fifth (3/2) on C and G in the strings shown in example 6. In a way, this piece is like a combination of Strict Style and Free Style. The trombone and harp I are based on a simple anhemitonic pentatonic scale throughout. It is the other instruments that participate in the “free” aspect of this composition.

AT THE TOMB OF CHARLES IVES

Figure 10. *At the Tomb of Charles Ives*. Excerpt (p. 6 of the score) Harrison.

In this excerpt, the strings, with intonational assistance from harps II and III, depart from the C pentatonic the most before the last repeat of the trombone phrase. The intervals are mostly drawn from just-intoned diatonic modes on several different tonics in fairly rapid succession. Harrison seems to have made concessions toward playability in this piece and it has indeed proven to be the most frequently performed of the three.

For all the stability of the pentatonic sections of this composition, the string passage at page 6 of the score³ moves the farthest from the tonic. This brings us to the most harmonically remote area right before the final return of the pentatonic trombone theme in the last measure of that page.

This can be seen very clearly on the lattice.

³ Published by Peermusic Classical.

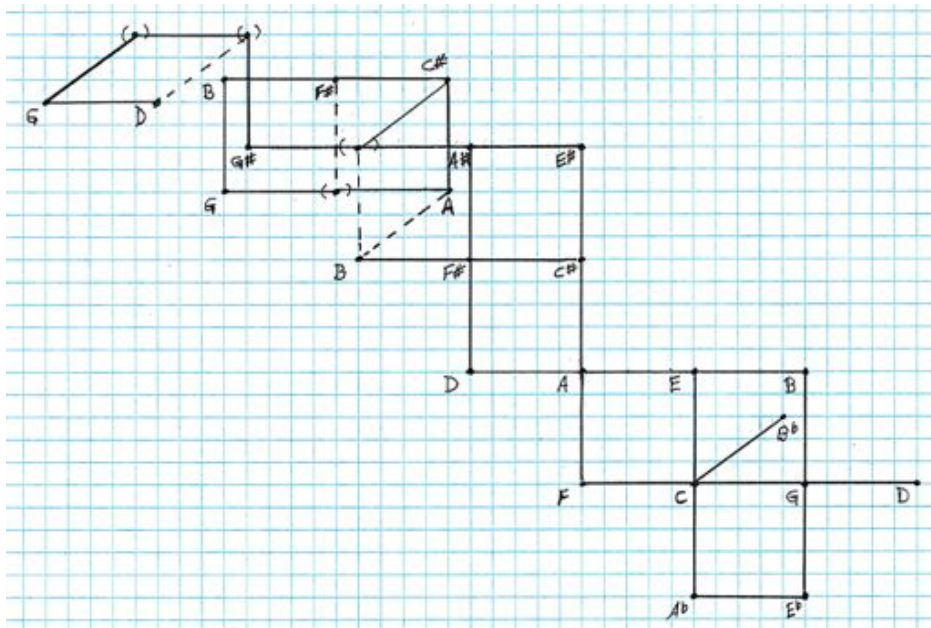


Figure 11. Lattice for Harrison, At the Tomb of Charles Ives.

The lighter areas at the bottom right represent the pitches used for the first five pages and the end. The pentatonic framework is C, D, E, G, A in that region of the lattice. At the top left are the pitches in the strings that mark the most remote harmonic region before the return of the theme in the trombone in the last measure of page 6 pictured above in example 10.

Though Johnston had used intervals based on primes 7 and 13 in the last section of his quartet movement, these intervals did not have any function relative to the commatic drift that I described. They were used primarily for color and interest in the inside voices of the second violin and the viola.

Harrison, on the other hand, moves through some areas related to the preceding pitches by intervals of prime number seven (related to the seventh harmonic). These are shown in the lattice by diagonal lines that represent a third dimension.

Final considerations

In Harrison's practice, Free Style requires a great deal of conscious control rather than a free expression of musical intuition. This stems in part from the strictures of instrumental performance, but also from Harrison's desire to use the intervals of just intonation in ways informed by his knowledge of acoustics and the ideas of earlier theorists, indeed including the Persian theorist and polymath, Ibn Sina (980-1037) and the Greeks, Didymus (1st century BCE) and Claudius Ptolemy (c. 100 – c. 170 CE) among others. Though the body of Harrison's Free Style works is small, it displays the same richness of ideas and expressivity as his more numerous Strict Style compositions. The distinction between these two approaches informs the work of many composers who use just intonation and other microtonal approaches to the present day.

Aside from the fact that both composers use microtonal harmonic distance to help delineate form, there are important differences. Johnston is thinking tonally here and though he uses

“whatever intervals he feels he needs,” it is at the service of the overall tonality. This does not diminish Harrison’s insight – his use of Free-Style technique is beautiful in itself and a rich avenue for exploration – but it is a very different approach than that of Johnston.

While these approaches may have been impractical in the past, today we have the advantages of technology—and dedicated performers—to allow us to continue to explore in those directions.

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Development of musical motives on the drums: a theoretical and practical approach to their use in the study and musical performance of the instrument.

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Abstract. This article aims to discuss and exemplify the use of the concepts proposed by Terry O'Mahoney in his *Motivic Drumset Soloing* method when applied to the construction and/or development of rhythmic motives in the context of the accompaniment and the improvisation on the drums. By starting from the principle of variation of musical motives as a tool for the development of a musical discourse, one adopts some procedures of the above-mentioned method to exemplify their use on the drums, within a context composed almost exclusively by rhythmic elements. Procedures normally used as compositing techniques, such as imitation, inversion, retrogradation, augmentation, and embellishment, just to name a few. To achieve this, we have written several musical examples using the parts of a standard drum kit: bass drum, snare drum, tom-toms, floor tom, hit-hat, and cymbals.

Keywords: Drums; Improvisation; Performance.

Introduction

When we use the development of musical motives –proposed by Terry O'Mahoney in his *Motivic Drumset Soloing* method– applied to the drumset, among the possible results that one can obtain, we list two of them, which are more directly related to education and performance respectively:

- 1) To develop an organization for the study of motivic development, by promoting a small systematization of possible procedures for the construction of grooves, types of comping, and improvisations.
- 2) To produce theoretical material that is appropriate and helps the task of musical analysis, in our case, specifically the drums.

To achieve this, we have written several musical examples using the parts of a standard drum kit: bass drum, snare drum, tom-toms, floor tom, hi-hat, and cymbals. On the one hand, the examples are easier to perform since the elements involved in the discussion are independent of the technical complexity; on the other hand, they become more readable when clearly and objectively exposed to the minimum of rhythmic figures necessary for their understanding.

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In addition to these examples, we also used the same procedures discussed during the musical analysis of some transcriptions made by us. This study aimed to determine if the technique used would be reliable when submitted to the screening of artistic performance presented by other musicians.

Development of musical motives

The construction and development of the musical discourse through the use and variation of motives is widely used in compositional processes, and it is also a subject generally discussed in the literature. While appropriating this compositional procedure as a reflection related to an instrument with no definite pitch or pitched sounds, as the drumset, one must resort to some basis to sustain and make feasible the development of such work. The following statements: “even the writing of simple sentences involves the invention and use of motives, even if perhaps unconsciously” (Schoenberg, 1991: 35), and “[A]ny rhythmic succession of notes can be used as a basic motive [...]” (idem, 1991: 36) exemplify that idea (Author’s translation). The same resource used in musical composition is also discussed by Kenny and Gelrich, both authors refer to it as one of the three cognitive stages used while improvising, mentioning that:

In motivic improvising, motives develop linearly, with each new unit of improvisation drawing upon improvised material produced either immediately before the improvised event or within recent memory (2002: 122).

For this study, we took into account some ideas presented in Terry O’Mahoney’s book entitled *Motivation Drumset Soloing*, which we consider to be the starting point for reflecting on the subject. We will also assume as premise the similarities between a verbal and a musical dialogue. Still, on this subject, Monson stated that “[W]hen musicians use the metaphor of conversation, they are saying something very significant about musical process” (1996: 81). Another correspondence between a conversation and a musical interplay occurs during the cognitive process mainly when a musician is accompanying a soloist or improvises. Monson gives us an example quoting a comment by the pianist Herbie Hancock about his experience as a member of the Miles Davis Quintet:

[w]e were sort of walking a tightrope whith the kind of experimenting that we were doing in music. Not total experimentation... we used to call it “controlled freedom” [...] just like conversation - same thing. I mean, how many times have you talked to somebody and [...] you got ready to say, make a point, and then you kind of went off in another direction, but maybe you never wound up making that point but the conversation, you know, just went somewhere else and it was fine. There’s nothing wrong with it. Maybe you like where you went. Well, this is the way we were dealing with music (Monson, 1986: 81).

Another group that used the principle of dialogue among its members was the trio of the pianist Bill Evans, who, in an innovative way for his time, was predisposed to promote democratic principles in their trios. In the second part of the three-part interview with the drummer Marty Morell, a member of one of these trios, Marc Myers, on the JazzWax blog, describes:

[t]he first Bill Evans Trio with bassist Scott LaFaro and drummer Paul Motian released the rhythm section. Until the first formation of the Bill Evans Trio in 1959, a rhythm section was largely a support unit for metals.

Or in cases where a trio was alone, bass and drums were there to keep time while the piano played. But with the first Bill Evans Trio, the rhythm section became something much more - a group of independent talkers who exchanged ideas advanced by the pianist (Myers, 2012).²

In these two reports, we have noticed the presence (and/or necessity) of communication between the instruments, in order to “establish the feeling and the character of the performance” (Monson, 1996) and to reinforce the statement that the drummer’s musical discourse “positively influenced the implementation of the other instruments”. Berendt (2009: 244) refers that some pertinent questions arise from these statements: is the drumset capable of promoting, encouraging, suggesting, or facilitating something in the musical context? Does it affect the performance of other instrumentalists? If so, in what way and how intensely?

A possible response to this problem - the importance of communication between instruments - is because it contributes for a better understanding of how these changes took place and how they are able to help the viability of possible study methodologies for performative action, it is about observing changes suffered by the drumset during its history, and their roles within a group. From an element that sustains musical time (pulsation) to the most participatory dialogue in the so-called Chambers Jazz Groups, the drumset has been transformed, not only its physical structure, but also its idiomatic characteristics.

As an example, one can refer to the year 1936, wherein the Brazilian drummer Luciano Perrone presented to the audience of the Radio Cajuti in Rio de Janeiro, a kind of casting as a musician, a solo concert that lasted about 15 minutes demonstrating some Brazilian rhythms adapted to the drums. Also Radamés Gnattali, an important Brazilian composer, arranger, and conductor, in his “Divertimento para Seis Instrumentos” (1975), assigned to the drummer, in some particular moments, the central role in the musical plot: delegating to it not only an auxiliary function and rhythmic maintenance, but rather determining and active position within the musical discourse, also solos and even counterpoint sections with the other instruments are present in this arrangement (Damasceno, 2016). Author’s Translation.

According to King (2014: 5), Max Roach, an American drummer and one of the precursors of the Bebop era in this instrument, contributed since the 1930s “to establish the drummer as a melodic musician in a group, further away from the role of time maintainer”. Thus, somehow this role within a group is also capable of being fulfilled by the drummer, who even without possessing in his instrument, conditions to express himself musically through notes with defined pitch, organizes his musical discourse in a way to be understood within certain common parameters such as: musical form, textures between the different sections, tension and relaxation of sentences, contrasts, among other principles that help in the organization and understanding of what is played.

In O’Mahoney’s method some concepts for the development of small motives are defined and organized, which combined with other small motives are the basis for the construction of larger musical phrases. Another drummer and teacher, John Riley, similarly lists a series of these procedures for the same purpose, even if, in some cases, these use a somewhat different type of clarity (Riley, 1997: 37-40).

Finally, still regarding these principles, it is important to mention another element that helps in the understanding of development procedures. It is the concept of melodic shape, which allows us to enter even more into the universe of conventional musical analysis, and whereas that this is primordial when talking about instruments that do not have a definite pitch, it will

² More information available at: <http://bit.ly/1G5HpUC> (accessed on April 30, 2020).

end up adding new perspectives and will provide more elements for the understanding of the performance of the drummer. In his work entitled *Melodic Jazz Drumming*, McCaslin illustrates the subject while quoting Canadian drummer Barry Elmes when he comments on the melodic form:

[s]o instead of just playing drums, you're trying to express melodic ideas. You do not have to touch the actual pitch, but the melody has shape and you can touch the shapes on the drums. You can touch the contours of the lines on the drumset and that's what I try to do (McCaslin, 2015: 13).

The drums parts will be written on the staff following the standard model, exemplified in Figure 1.



Figure 1. Drums notation on staff

Below in Figure 2, there is a description of each of the procedures used for the development of musical motives on the drums, according to O'Mahoney.

1) Repetition

It is the most basic form of development, which simply repeats the motives or its derivatives (phrases, sections, and so on), in its original form (exactly) or altered.



Figure 2. Example of repetition

2) Fragmentation

Fragmentation is the process in which a motive is sectioned into smaller parts, and from this fragment, we have a new motive related to its original. The larger the size of this fragment, the greater the possibility of identifying them with each other (as it shows Figure 3).



Figure 3. Example of fragmentation

3) Extension

An extension is the addition of new material at the end of a motive aiming to increase the size of the sentence, finalizing or connecting it to another one. Usually does not resemble the original motive (as shown in Figure 4).



Figure 4. Example of extension

4) Augmentation³

Also associated with the term rhythmic elasticity, augmentation adds duration to the figures, increasing the size of the motive. This increase happens by different means, a more common cause is a doubling of the value of the original figure, for example: an eighth note turns into a quarter note. This technique can resort to any factor to multiply the duration of the figure changing its original value (Figure 5).



Figure 5. Example of augmentation

5) Diminution

The opposite of the augmentation, the diminution, as the name suggests, decreases the size of the motive, using the same previous features, but in this case, shortening the size of the rhythmic figures (Figure 6).

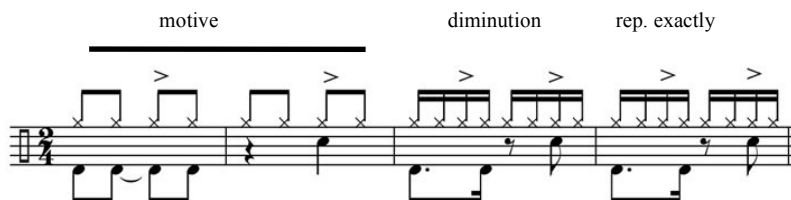


Figure 6. Example of diminution

6) Inversion

In the inversion, the melodic shape is inverted but keeps the same pitch of the initial figure (as seen in Figure 7).



Figure 7. Example of inversion

³ In addition to Riley (1997), also Almada (2000: 247) uses the same term to refer to this procedure.

7) Retrograde

In this procedure, we simply start the motive backward. This retrogradation can be rhythmic, melodic, or both, and unlike inversion, the initial figures are not the same (Figure 8).



Figure 8: Example of retrograde.

8) Embellishment

Embellishment means enhancing or decorating a motive. This procedure can be done in three different ways.

- a) Adding new figures to the original motive.



Figure 9: Example of embellishment by addition.

- b) Adding ornamentation to the original motive.



Figure 10: Example of embellishment by ornamentation.

- c) Doubling figures of the original motive.



Figure 11: Example of embellishment by doubling.

9) Simplification

It consists of simplifying the original motive by subtracting elements from it. It can be done in different ways.

- a) Removing figures from the original motive.



Figure 12: Example of simplification by subtraction of figures.

- b) Removing existing ornamentation.



Figure 13: Example of simplification by subtraction of ornamentation

c) Removing any doubling incidents.



Figure 14: Example of simplification by subtraction of figures.

10) Rhythmic Displacement

This technique consists of moving the motive fully forward or backward within the bars.

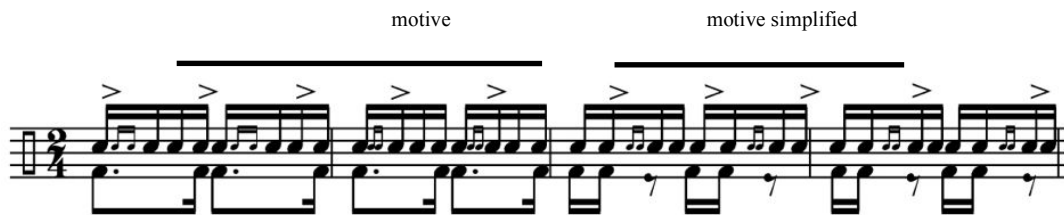


Figure 15. Example of rhythmic displacement

Another concept discussed in this work, which also helps in understanding the form of musical analysis, is the orchestration of melodies. To do so, based on the principle of melodic shape, the rhythm and variation of the pitch of a melodic line are taken as references. For example:

- If the melody starts on a low note and goes to a higher note, we can start by playing the rhythmic figures on the bass drum and then move on to tom-tom;
- If we find a long note, we can use a cymbal and leave it sounding by the time of this, and then interrupting its sound through a smothering.
- If we find an ascending *glissando*, we can play the drum with a stick, while the other hand exerts pressure with the fingers on the surface of the skin, thus altering the approximate pitch of the resulting note.



Figure 16: Example of orchestrated melody.

Concerning the orchestration of melodies, we have as an example the first four bars of the melody *O Barquinho* by Roberto Menescal and Ronaldo Boscoli, along with an orchestration of the same for the drums. The melodic shape is maintained most of the time enough to, even without a clear definite pitch, suggesting the outline of this melody. In the 2nd and 4th bars, we used the hi-hat and the cymbal respectively, so this way we can represent the notes of longer duration of the melody, which are presented in the second time of the same bars. Another resource used in this example was the choice to finish the sentence using the low tom-tom, in contrast to the hi tom-tom that was written in the 3rd measure, since we are suggesting, through a downward movement, a sense of completion for the short phrase.

The following example represents a musical analysis using the tools presented in this paper.

It is a composition by Benedito Lacerda and Pixinguinha called *1x0*⁴ in 1919, written as a tribute to Brazil's victory over Uruguay in the decision of the South American Championship held that same year. Later, in 1993, this song integrated the lyrics written by the guitarist and composer Nelson Ângelo, a member of *Clube da Esquina*.

When recording this song, the drummer Luciano Perrone used a different timbre option, which was obtained by leaning the left stick on the skin of the box and the right drumstick playing on it. He interposes this with simple notes played in the box, obtaining from this, besides two distinct timbres, also two different levels of the pitch in the same piece of the instrument. This will be named simply by a drumstick, and its spelling in the score will occupy the same space that was used to engrave the snare drum but with an x-shaped note head.

The arrangement begins directly with the exposition of the first section A in unfolded progress (quarter note, approximately 66bpm) and in the first 5 bars, there is only one marking on the cymbal, without kicking, when one hears the figure of the triplet. After a small bridge, which also serves as a preparation for the pace bend that happens in the 13th bar, now turning to approximately 132bpm, Perrone assumes a drive in the snare drum, which looks more like comping than the characterization of a marching rhythm.

The image shows a musical score for two parts: Melody and Drumset. The Melody is written on a single staff in treble clef, 2/4 time. It consists of 7 measures. The Drumset is written on a single staff with a key signature of one flat and a common time signature. It consists of 7 measures. In the 5th measure of the drumset, there is a circled section containing a triplet of notes. The notes in the circled section are: a snare drum note with an 'x' head, a snare drum note with a regular head, and a snare drum note with an 'x' head.

Figure 17: 1x0 - Bars 13 to 19 of the first exposition of section A. (0:28 to 0:33)

Several times the conduction of the snare drum supports notes of the melody, and since no pattern is found in the same conduction, the drummer's starting point is supposed to be the melody itself, thus characterizing an accompaniment or comping process, in this example, without the concern of following the melodic shape.

The next recording analyzed is *Cochichando*⁵, *choro* composed by Alberto Ribeiro, João de Barro, and Pixinguinha originally called simply *Cochicho* and recorded in 1944, with lyrics written by Braguinha, at the time the director of the Continental label, and with the participation of the Carioca singer Déo (Ferjalla Rizkalla).

⁴ Audio available in: <https://youtu.be/UU6QWgE1-WA> (accessed on March 10, 2020).

⁵ Audio available in: <https://youtu.be/lyyqJkFQmSo> (accessed on March 10, 2020).

The conduction of the drums begins in the 9th bar (second half) of the first section A, and the groove is played with brushes in both hands and refers us to a pattern of a “maxixe”, more consistent with the rhythmic line played by the double bass.



Figure 18: Cochichando - Example of the “maxixe” brush and bass pattern in 1° A.

In the second half of the first A, the melody passes to the accordion, and the guitar starts to drive with a *telecoteco* beat. This pattern is maintained until the second half of the second A when the snare drum motive is increased by a few variations, as shown in Figure 19.



Figure 19: Cochichando - Snare Drum’s Variations. Bars 9 to 12 of 2°A. (0:51 to 0:58)

In section B of the theme, the guitar player starts to play the theme, and, as an example of simplification, Perrone no longer plays the brushes of the second sixteen note of the first half. This changes the original texture while generating a slight contrast to the previous section of the song.



Figure 20. Cochichando - Rhythmic pattern of conduction found in section B.

Conclusion

Given the presented proposals, one can apprehend that the results obtained were satisfactory. These results were achieved through tests made directly with some students. It was also considered the personal performance of the author of the present article (based on the organization proposed by O’Mahoney), who believes that these suggestions help the gradual development of the addressed subject while proposing to discuss individually each of the procedures described for the study of the motivic development. Besides, the ability of such procedures being used for the musical analysis, focusing on the drum, has also been confirmed. Again, these procedures almost exclusively use allowed the construction of a coherent structural analysis, and also a panorama for the musical performance.

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Extended techniques on the pipe organ

Cláudio de Pina¹

Abstract. The extended techniques on the pipe organ are other means of producing sound in this instrument. Several composers used their own notation or guiding rules to expand the sounds of the pipe organ. Although Ligeti, since 1960, was the first to become known using these techniques, with his works for pipe organ (*Volumina*, *Harmonies* and *Coulée*) one can assume that these sounds always existed, but they did not have a formalization. A clear notation and explanation are needed to further develop the interests and facts about these techniques. In an instrument so tied to a functionality, it is paramount nowadays to re-incorporate these techniques in the contemporary pipe organ repertoire and creation. Several new techniques have been developed and a new approach is needed.

Keywords: Pipe Organ; Extended Techniques; Notation; Ligeti.

Pipe organ

In music, extended technique is an unconventional, unorthodox, or non-traditional method of singing or playing musical instruments employed to obtain unusual sounds or timbres (Burtner, 2005). The pipe organ as an instrument for contemporary music is established by several composers such as: Iannis Xenakis (1922-2001), György Ligeti (1923-2006), Egil Hovland (1924-2013), Mauricio Kagel (1931-2008), João Pedro de Oliveira (1959) and Frederik Neyrinck (1985), quoting a few. These composers used different approaches, some of them with great originality. The pipe organ is an instrument that is deeply rooted to a functionality and purpose, portrayed on the repertoire of solo and chamber music of the Baroque period. Besides having a strong backbone with Bach and several other composers, most of these advances are from the musical domain, not sound domain.

A great concern of this article relates to the several techniques used on the pipe organ. Some of these effects are similar, but are not linked with the early repertoire, such as ‘thunder and cannon’ on early music for historical instruments (Sumner, 1973). These different kinds of techniques with the keyboard have been a commonplace throughout ages, especially in improvisation.

Most of these techniques reside in the way one interacts with the keyboard, especially on a pipe organ that is not fully electronically enabled. It means that the keys are played with a traction mechanism, and the register stops are mechanically connected to the organ. If a pipe organ is not controlled electronically, one can achieve other kinds of effects and techniques. But what are extended techniques on the pipe organ? These techniques can be called extended, since they change the way you play the pipe organ. Some examples of such techniques used by the above-mentioned composers are: playing with weights that hold indefinitely the key and the sound produced; using the register stops in unusual ways, such as not full opening the stop, producing a muffled and detuned sound; or varying the pressure of

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the keys, which means that one can control directly the sound being produced in a way that is similar with the modern after-touch in synthesizers.

The pipe organ, in a certain point of view, is akin to an additive mechanical synthesizer. One can pull stops to add layers of sound. The extended techniques of altering the way how an organist plays, bring another level of expression and sound. One can use weights to hold the keys and therefore, manipulate the stops and gradually open them. Or one can vary the pressure of the keys at the same time that the stops are manipulated. The possibilities are almost endless, and in this regard, the pipe organ behaves like a synthesizer, albeit being non-digital.

Luk Vaes in its thesis entitled *Extended Piano Techniques* writes about several techniques on the piano, and several authors delve on their techniques to certain instruments. In the book *Music Notation in the 20th century*, Kurt Stone makes a systematization of these different techniques. He explores several extended techniques on the pipe organ, focusing on the notation for the instrument. In a brief analysis of the repertoire concerning the extended techniques, one can notice that each composer uses different notation and means in order to obtain certain effects and sounds. Each composer uses different notation and means because most organs has slight differences, so there is no structured way of notating or possibilities for extended techniques.

Ligeti

When Ligeti composed for the pipe organ in the 1960s it did not exist a continuously variable air valve to control the pressure of the pipes, as with modern pipe organs (e.g. St. Peter's pipe organ in Köln or St. Martin's pipe organ in Kassel). Although Ligeti studied the instrument, and also the appropriate technology to change the sound the way he wanted, which was not available at the time. These ideas of sound manipulation are a consequence of the electronic works that Ligeti has achieved at the WDR (Westdeutscher Rundfunk, Köln).² With *Artikulation* (1958) and *Glissandi* (1957), Ligeti explored paradigms related to sound that were impossible to do with acoustic instruments at the time, but when approaching the limits of the electronic systems in Cologne, he started treating the instruments in another way.

At Cologne Studio, Ligeti learned some of these techniques mimicking in other instruments, yet in regard to the pipe organ it is different due to its particularities. Some of the pieces that Ligeti wrote are a pertinent remark, because they reflect a changing in the way of thinking and operating a machine like the pipe organ. So, it is in this sense that will be explained the clusters of *Volumina* (1961/62, rev. 1966), the long chords of *Harmonies* (1967) and the speed of *Coulée* (1969) including tape and electronic manipulations, couched in an acoustical instrument as the pipe organ. In this regard, special techniques were used to attain the desired sound palette. Clever manipulation of stop registers, engine and key depression allowed the sounds that Ligeti was looking for.

Ligeti lived in Vienna, from 1959 to 1969, and in 1961 he accepted the position of invited professor of composition at the Musical High School in Stockholm, where he met the Swedish organist Karl-Erik Welin. Together with the German organist Gerd Zacher, Ligeti had some connections and privileged access to the instrument. Zacher would be the organist

² Studio for Electronic Music of the West German Radio in Cologne.

that would play the studies for organ, *Harmonies* on October 14, 1967, in Hamburg, and *Coulée* on October 19, 1969, in Seckau/Steiermark, both times assisted by Juan Allende-Blin.

In the case of *Harmonies*, the author and several performers quote a few ideas to “starve”³ the wind supply in order to achieve the sounds needed. Also, special advices are added regarding the registration, dynamics, tempo and even practice considerations like octave transpositions and specific registrations needed. Although the score doesn’t have a notation for the extended techniques involve, one should use them taking into account composer’s notes.

Regarding the execution, one must “play *legatissimo* throughout; all ten fingers stay down at all times” (Ligeti, 1967: 4). This is a reminiscent of the French articulation style in pipe organ music, it was a common practice many decades before. The use of ten note chords also create a mass of sound, characteristic of Ligeti’s music, albeit different from the clusters of *Volumina*, since specific notes are written on the score.

Regarding notation:

the white and black noteheads do not indicate note values; their purpose is to make reading easier. A white notehead indicates a change of pitch, i.e., a move from one key to another (the finger concerned slides from a key to the nearest adjacent key, since pitch changes are always a minor second up or down). The black noteheads indicate the unchanged pitches (Ligeti, 1967: 4).

This style of notation, very different from *Volumina* with its graphical notation, tries to achieve a similar sound palette, but this time with fixed notation in a score. The use of black or white noteheads is just a marker for performance issues. Since tempo in notes and bars is not fixed, the changing of noteheads aids the performer to follow the score. A special note to the use of several *fermatas* to emphasize the duration (Figure1).

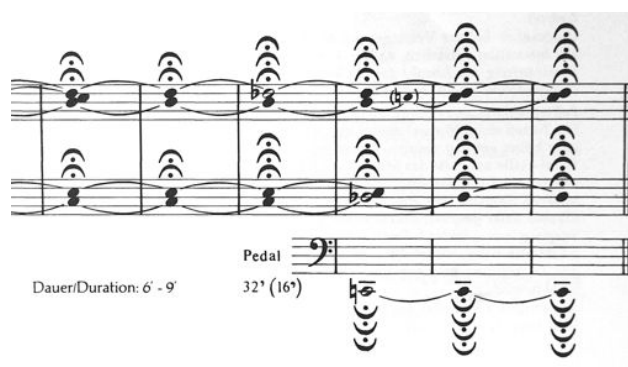


Figure 1. Harmonies ending.

Regarding tempo:

the individual 'bars' can differ in length as the player wishes; certain chords can be held longer, and others can be treated as passing chords of shorter duration. Nowhere in the piece should the chord successions create an impression of meter or periodicity (Idem: 4).

The notion of passing chords and the value that they can represent is left to the performer itself. Since changes are always in minor seconds, one can assume a contra-punctual resolution of leading voices or passing notes. However, the work *Harmonies* does not follow

³ The word “starve” was used by Ligeti on his notes, meaning to cut and deplete the air supplied by the wind chest. While closing it partially with certain objects or using a different motor (i.e., vacuum cleaner).

any tonal counterpoint rules. These changes only serve to create fluctuations on the sound. All changes are made to directly influence the resulting sound from each key.

Regarding dynamics and ‘tone colour’:

The whole piece is soft to very soft. Pale strange, “vitiated”⁴ tone colours must predominate. Denaturing the sound is achieved by ‘greatly reduced wind pressure’ (‘artificial consumptiveness’). Wind pressure can be reduced in a number of ways (Ibidem: 4).

There are not many editions that include ways of notating made by both the author and the organists that performed *Harmonies*:⁵

- a) by using a weaker motor like that of a vacuum sweeper, inserting the hose into the [air] reservoir. (Gerd Zacher)
- b) by adjusting the valve in the chief wind-receiver between the fan and the reservoir. (Detaching the rope holding the valve or reducing the play of the valve so that the flow of air from the fan to the reservoir is impeded). (Gábor Lehotka)
- c) by opening the wind chest. (Gerd Zacher)
- d) by reducing the rotation speed of the fan by loading the circuit (installing an adjustable resistance in the circuit, for instance). (Zsigmond Szathmáry)
- e) by removing some low pipes from a pedal reed register; the relevant stop is drawn, and the relevant pedals are held down throughout the piece, so that some of the wind escapes (other notes of this register cannot be used during this piece!). (Zsigmond Szathmáry)

Depending on the construction of the organ and the inventiveness of the player, other ways of reducing wind pressure will be found. The effectiveness of these methods also depends on the registration (Ligeti, 1967: 5)

This quote is the most important information for properly performing *Harmonies*. The result depends on the construction of the organ and knowledge of the performer. A certain inventiveness is required to perform this piece. This could lead to a false assumption that the piece will sound drastically different each time it is played, especially with different pipe organs and organists, but that is not the case. The constriction of the ‘rules’ to play the piece, even in very different pipe organs (from the various construction periods) creates an axiom, always permitting the production of *Harmonies*. Allied to the fact that the notes are always the same, only time values can change, albeit Ligeti indicates that the duration will be 6’ to 9’.

Other methods are closer to empirical knowledge and limitations of the instruments. For instance, one should take special care in altering these instruments, that usually reside in churches. Other organs are impossible to alter in any of the described cases, especially the historical ones with regular bellows. Szathmáry and his use of register stop to cleverly starve the wind supply is a safe method without altering too much the instrument.

A simpler method would be to use half-drawn registers but paying special attention to the registration changes needed throughout the piece.

⁴ “Vitiated” is another word that Ligeti uses to refer to “starve”.

⁵ These are some of the notes on the Schott edition of the “Zwei Etüden for Orgel, p.4”.

The explanation for this phenomenon relies on the physical behaviour of the pipes themselves. Starving the wind pressure, the pipes cannot ‘sing’ properly the notes. In a normal operation of the pipe, one can listen to the timbral differences between a reed, flue, open, closed and all the myriad of pipe shapes and sizes. Since they are not behaving in a normal way, some of their characteristics are lost. The acoustics behaviour of a pipe, basically a cylinder that can be open or closed and have a reed or a lip, already has a great amount of non-linearity behaviour during the transient part⁶ (Olson, 1966: 157). The pipe starts to acquire an acoustic mode shape when the turbulence is balanced with the normalization of pressure, and that give us a musical note⁷ (Henriques, 2014: 643).

Regarding registration:

Since the organist uses both hands at all times, an assistant will be needed to change the registration; frequent changes are desirable and must occur in such way that the timbre alterations always take place imperceptibly and apparently continuously. On mechanical organs, half-drawn stops are welcome as half-depressed keys [...] sudden entrances of starkly contrasting registers should be avoided. The choice of registers will have a great influence on the denaturing of the sound. Pipes requiring a lot of wind are especially good at producing the desired ‘consumptive’ sound (Karl-Erik Welin, Gerd Zacher).

The continuous change of registers, simultaneously with the way it is notated, gives a mass of sound. That mass of sound is the final result and it is not related with pitches on the score, it is an extension.⁸ One could assume that it is an extended way of achieving certain sounds. On the other hand, one could also assume that the work *Harmonies* from Ligeti is a good example of physical modelling synthesis with ten oscillators (multiplied for each register) and various variables for each oscillator. Even when one can program such an endeavour (i.e., MaxMSP or SuperCollider)⁹, the randomness and behaviour of each pipe are difficult to predict. The same assumption could be applied to *Volumina*’s introduction, that uses all keys depressed and then you turn on the organ. In fact, denaturing the sound is only a simple explanation for what is really happening. The real phenomenon is more related with the field of hydrodynamics and fluid physics, than with acoustics or organology. A certain degree of chaos is implemented into the pipe’s system.

The knowledge about the way the pipe organs works in Ligeti’s compositions is so deep that he suggested the use *crescendo* and *decrescendo* to simply changing the registers. Since the wind supply is starved, for each pipe that is drawn, the same wind pressure is used for all the pipes in action, so a decrease of volume and ‘denaturation’ of sound is heard. The same happens at the end of the piece, in which there is a decrease of keys depressed, that would lead to a *crescendo*, but countered by the pedal note we listen to a *diminuendo*. All of this, only with stop manipulation. That is the reason why *Harmonies* is a good example of extended techniques.

An additional remark: at the end, if the number of notes is decreased to the amount of three notes, the *crescendo* or ‘natural’ sounds are not heard. There is an extra low note on the

⁶ In Olson’s book, some chapters are dedicated to the behaviour of several types of pipes, and it is referred that when the pipe starts to vibrate, in the beginning of the sound, there isn’t a periodic behaviour, when the systems stabilizes, the tone arises.

⁷ Henriques specifies the amount of turbulence that is needed at the beginning of the pipe’s vibration. This turbulence is related to the transient of the pipe and also to intonation and tuning properties.

⁸ The notes are written in pitches, and the resulting sound is not equal to that pitch. This is what Ligeti calls “denaturing” from a “vitiated”/“starved” wind supply.

⁹ Computer programming languages for producing sound.

pedals with a 32' register (the deepest note and register, C)¹⁰, but as the wind pressure is starved, this note is not perceived. The larger the pipe, the lower the note, higher wind pressure needed to produce a note properly. In fact, Szathmáry had the idea of 'denaturing' the sound using a continuous pedal without a pipe, to let the wind escape, but he was aware of the desirable note for the end of *Harmonies*. A special indication is made to not using an 8' on the pedals in any way, albeit a soft 16' could be used, Ligeti states: "very soft, almost only 'wind'".

Regarding manuals and octave transposition, a common practice in organ repertoire¹¹, the work *Harmonies* can be played *ad lib*, but Ligeti recommends an octave lower since it does not affect the lower note on the pedals¹² at the end, but if a performer chooses to do so, he needs to prioritize the 4' registers in place of 8', thus the sound matches the notation. In this case, it favours the 'denaturing' of the sound, since all the other registers will be played an octave lower, so they will need the double amount of wind pressure, behaving more erratically.

Another statement corroborates that more registers the pipe organ has, the more intricacy is the functioning and interaction. So, the complexity of the sound is directly proportional to the number of registers of the pipe organ. One could ask, but why there are not more works for pipe organ using these kinds of techniques?

Notation

Thus, it is proposed a new notation for extended techniques on the pipe organ, based on the mentioned repertoire. The unusual appliance of techniques to achieve other sound effects is the spark that starts an *avant-garde* approach to the pipe organ, culminated with the pipe organ works by Ligeti (*Volumina*, *Harmonies* and *Coulée*). Many things can still be made regarding this instrument, without the use of computers, effects, or altering the instrument in any way. By altering the instrument, we are creating a new instrument and not a new way of playing the instrument. Besides, the number of sheer variables of sounds one can achieve is unrivalled with other acoustic instruments.

The sound morphology of the pipe organ doesn't permit the same interpretation as other instruments. The key connected to the pipes, brings a sound with always the same envelope. A performer can only adapt the articulation between the keys and the acoustics of the space to bring forth a degree of expression. The same applies to the dynamics, the organ can only add or subtract registers, so by layers. Albeit some instruments have a volume pedal, which either brings more registers or open/closes certain cabinets of pipe ranks, thus mimicking a *crescendo*.

The use of extended techniques breaks some of these paradigms. One can use a half-key technique for creating a small *glissando* and *crescendo*. Manipulating the stops, one can achieve a *tremolo* effect, or bring non-pitched sounds. Like in *Volumina* from Ligeti, by turning on and off the instrument, while some keys and registers are drawn, achieves another

¹⁰ The same note used at the beginning of *Also sprach Zarathustra*, op.30 (1896) by Richard Strauss.

¹¹ The best example is the *Concerto in D minor*, BWV 596 (1713-14) from Johann Sebastian Bach (1685-1750), an adaptation of the *Concerto Grosso in D minor*, RV 565 (1711) from Antonio Vivaldi (1678-1741), in which the octaves of the registers (4' and 8') are needed to play the piece without crossing hands on the manuals.

¹² Although the work *Harmonies* does not include a score for the pedals, a passage is added in the last bars, like an *ossia*, with the C note and registration comments.

kind of sound, more similar to the synthesis. For an appropriate use of these techniques, a systematization of notation is needed in order to help composers and organist in understanding what is needed. Therefore, the development of notation to simplify the use of extended techniques is desirable, also fostering interest in these techniques. Graphical scores or improvisational practices are too complex for a newcomer to understand such techniques.

Accordingly, several compound examples are described below, which are suitable for clearer perception and reading. Many of the composers here quoted have their own types of notations, and these examples are not fixed. One can and should adapt them to their specific needs depending on the music.



Figure 2. Turning on and off. Applying weights. Removing weights.

In Figure 2, we have a clear sign for turning the motor on and off. The duration of the decay/rise of the sound is proportionally connected to the number of pipes that are fed by the wind. This means that many keys and/or many pulled registrations will behave differently. An introductory test is highly advised.

By applying weights to the keys with a notated rhythm, and by changing the notehead, a new way of interacting with the keys is created. The use of *arpeggio* to remove the weights in a certain order is a natural consequence of the hand movement while removing each weight in order.

Another possible way is the use of words as FIX, used in *Australpnea* (2010) by Frederik Neyrink (1985), or simply to use an *ossia* staff for longer values or keys on another manual. For weights, a simple solution is to go to the sport section or a fishing shop. Lead weights for fishing are the best option (from 100g to 150g) in a rectangle shape inferior to the wideness of the key. Indeed, it is an inexpensive way of testing these varied weights with the infinite sound¹³ in pipe organs. Nevertheless, one must take care with historical instruments, with superglue and felt, one can assemble a personalized set that would not harm the pipe organ keys.

The next examples are related to register manipulation. These can only be made with a non-digital organ. Some stops are quite sensitive, so once again, prior experiments are advised.

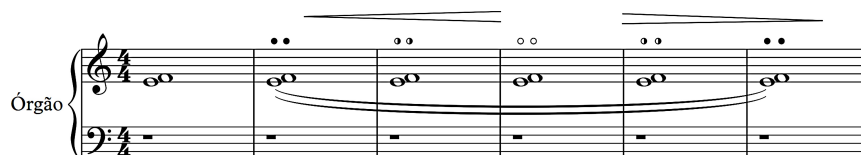


Figure 3. Half-key. Dynamics to aid the performer. Only possible with tracker mechanism

¹³ In the pipe organ, as the sound does not decay, you can obtain infinite sustainability of the sound. The use of weights or other means can help to achieve this infinite sound. As an example, one can see: *Organ2/ASLSP* (As slow as Possible) (1987) by John Cage (1912-1992): <https://universes.art/en/specials/john-cage-organ-project-halberstadt> (accessed on April 30, 2020).

With the aid of *crescendo* and *decrescendo* lines, a performer, assistant or composer, can have a general idea if a sound is rising or falling. In this case the sign is a dot, white, black or half-black. The use of a dot for the minimum amount of pressure is also correlated to the way that holes are closed in an aerophone. Also meaning that the white dot is the greatest amount of pressure on the key (or the usual amount to play a tuned note).

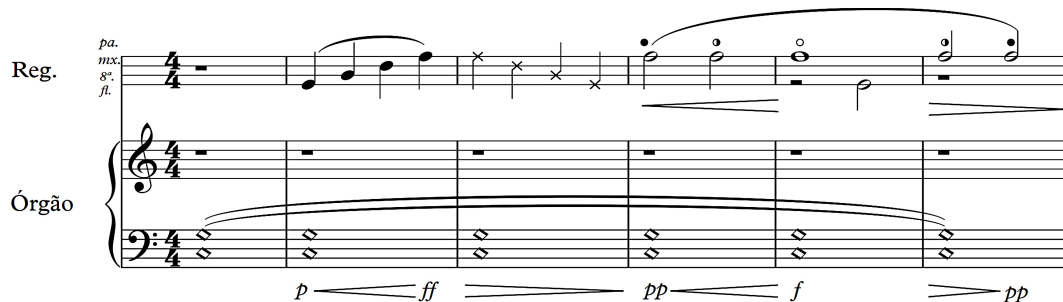


Figure 4. Stop part. Insert the most used register to apply rhythm to them. Half drawn stop. Dynamics to help the performer.

Using a staff for the stops brings another level of creativity and expression. One can notate rhythms to be ‘played’ by opening and closing the stops. The notehead is typically used for opening, crosshead for closing. When one needs to gradually open/close the stop, we use the same circle/dot sign. In this case, it is directly linked to the way registers work inside the organ, again, like keyholes in an aerophone. Dynamics marks can be presented to guide the organist, assistant and/or conductor.



Figure 5. Weights. Slowly removed at the end. Use spaces of Stop part for other registers. Open/close like an arpeggio. Apply rhythm, mimicking a tremolo. Half drawn stop.

The use of weights brings the possibility to the organist to ‘play’ with the stops. It also frees the hands to control the motor or prepare the next registrations. The *glissando* lines on the last measure are the indication of slowly removing of the weights, mimicking the half-key technique. For this example, consult *Rrrrr... (1980/81)* by Mauricio Kagel (1931-2008).

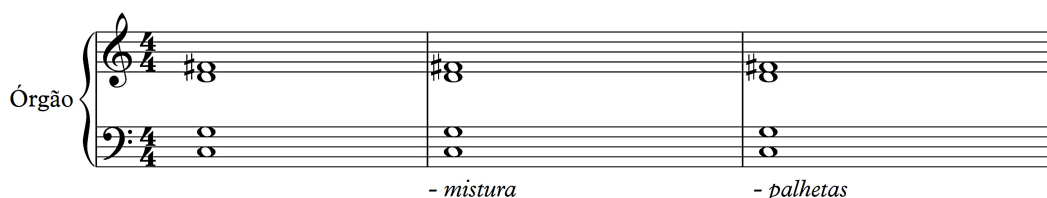


Figure 6. The usual way of notating register changes in a historical Portuguese organ.

Conclusion

This is the usual way of notating registrations changes in Portuguese historical organs. A subtraction or addition sign is used to call certain families of registers. In these organs there are usually some feet control to open and close such families of registers, being reeds and mixtures the most common. Some organs can also couple or decouple manuals and also store registrations on demand with electronic means. Although this is out of the scope of this article, nevertheless, with inventiveness, one can achieve the same sounds with a regular organ.

The amount of permutations is quite high, and several results were used by some composers. Much more are still lurking and waiting to be used, and it is the main objective of this article to indulge the curiosity of composers and organists to try out combinations.

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Paweł Szymański's Works Referring to Medieval Music

Violetta Kostka¹

Abstract. The article is devoted to intentionally intertextual music by Polish composer Paweł Szymański (b. 1954) which is presented in the light of Ryszard Nycz's intertextual theory. In the first part of the article the author sketches Szymański's poetics declared and gives a general description of his work. He puts forward such concepts as meta-reflection, meta-output and two-level music and states that he sets himself up in a group of surrealists. While discussing Szymański's output, the author emphasizes that almost every piece of music is governed by two sets of incommensurable rules which lead to discursive interference on the surface of the piece. She means historical rules used to create structures in well-known musical styles and abstract rules invented in order to transform historical structures into new works. In the second part of the article two Szymański's works are discussed: *Miserere* for voices and instruments, and *Three Pieces* for three recorders accompanied by a metronome. Both works clearly show references to medieval music, the first — to the religious, the second — to the secular. Both of them are also characterized by some modern means, mainly by modern syntax. The discussion of each work ends with an attempt to capture its meaning. In the first case it is the result of conceptual blending, in the second — a kind of intertextual game.

Keywords. intertextuality; Ryszard Nycz; intertextual poetics; postmodernism; Paweł Szymański; intentional intertextuality; medieval music; transformation; meaning

Introduction

Paweł Szymański (b. 1954) is among the best Polish composers of our time whose work includes numerous compositions for orchestra, solo instrument and orchestra, chamber ensemble, solo instrument, choir, vocal-instrumental ensemble, one opera, film, theatre and radio music, as well as music for tape. His music is often played at concerts and festivals in Poland and abroad. The biggest event of this kind was the *Festival of Paweł Szymański's Music* organized in Warsaw from 24th November to 1st December 2006. For a number of years, various institutions and music festivals have been commissioning new works from him. Two recently commissioned works honored the following events: 1st International Chopin Competition on Period Instruments in Warsaw, in September 2018, and the concert on the occasion of the 100th anniversary of Poland's independence in London in November 2018. Most of Szymański's music has been published, mainly by Chester Music, and recorded on CDs and DVDs. Its value is confirmed by a number of reviews where one can read that it evokes unforgettable impressions and equivocal associations, affects both our senses and our intellect, attracts the listeners' attention for a long time, fascinates and even hypnotizes them.

The entire poetics declared and the music of Paweł Szymański perfectly fits into the intertextual poetics — Ryszard Nycz's scientific construct recently published in articles in

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English (shorter version) and in Polish (longer version).² The characteristic feature of this theory is its untypical scope limited to modern and postmodern literature and all artistic disciplines, as music, fine arts, film, architecture, and so on. According to the author, postmodern intertextuality is “a manifestation of discursive interference — in a kind of, deriving from Bakhtin’s «a polyphonic word», the principle of «constructive parody» (Głowiński) or «double coding» (Jencks 1987, Hutcheon 1996, Welsch 1998)” (Nycz, 2012: 171). All that means “a kind of formal-semantic structure being under incommensurable rules [...] which cannot be reduced to themselves or to any superior model” (Nycz, 2005: 17). As examples, he gives “[rules] relevant to the functional form and historical style, elitist artistic experiments and the needs of hoi-polloi recipients [...], autonomous form and experience of formlessness” (*idem*). In the center of postmodern intertextuality is a work understood as an “intertextual construct” and its “weak” ontology. A work cannot be here valued neither as perfect nor original nor even new, and “there is no place for the demiurgic genius that creates a fundamental work of art from «nothing»” (*ibidem*). Tradition and culture are not treated in this theory as a paralyzing heritage, but rather as a reservoir of existing creative possibilities. If we take into account the matter of meaning, then it is dependent on three factors: “formal organization [...]; potential contexts of intertextual references that cannot be «closed»; competences, «pre-judgements» and changeable preferences of the ever-changing recipient” (Nycz, 2012: 173).

Paweł Szymański’s poetics declared

From the interviews, which journalists have conducted with him over many years, it appears that almost from the beginning of his creative work Paweł Szymański realized that avant-garde trends of his time “were becoming academic ones” (Szymański, 2006: 14) and that the contemporary artist had nothing else to choose except an intermediate way between complete novelty and tradition. Here is the justification for this situation:

There is now a dominant conviction that art — and thus artists — should create new values, a new language, something that distances itself, deviates from tradition. My observation [...] concerns the situation when the artist, moving away from the existing, functioning in the culture conventions too far, creates a hermetic language. This language cannot be understood, because both language and convention are understood intersubjectively; language and convention understood by one person — by the creator — cannot be a subject of communication. The artist begins to babble. [...] The practice of art cannot be separated from the collective intellectual condition. On the other hand, at some point we realized that the conventions of the past are trivializing and cannot be repeated indefinitely. This awareness began to affect evolutionary and conservative attitudes, revealing their weaknesses. This leads to the conclusion that neither one nor the other is acceptable: neither avant-garde optimism, nor conservatism. Therefore, the question: what remains? Meta-reflection, meta-output, referring to the paradox, universalism which allows us to reach elements found in various historical times, as well as in various geographical areas. I think that this is the path that many creators of various fields of art follow. But here comes another reef in the form of eclecticism which is for me — like for those who once

² Ryszard Nycz is Polish theoretician of literature, whose intertextual theory bases on French semiotician Michael Riffaterre’s achievements.

represented avant-garde ideologies — a negative phenomenon. The very fact of uncritical deriving from various areas of art or culture is not positive (Szczecińska, 2007³).

Szymański advocates “pure”, autonomous music which, however, does not prevent him from using the resources of the past. In addition, he states that he refers to other texts quite consciously, intentionally and wants listeners to recognize them (Szymański, 1986: 297). The fact that his works depict musical conventions in a non-continuous way results from his perception of the world: “The philosophical starting point is the assumption about the inability to reach reality as such (as a universe of attributes and relations) — available to cognition is only the incomplete number of fragments that cannot be comprehended. This idea is presented in a metaphorical way in the construction of the work” (Naliwajek-Mazurek, 2013: 14). Author’s translation.

Speaking of his works, as well as inventing titles for them, the composer situates himself in a rather specific artistic circle including: English writer Lewis Carroll, Belgian painter René Magritte and Dutch graphic artist Maurits Cornelis Escher. All these creators have presented in their works a reality full of contradictions and fantasies, although all differently. Here is Szymański’s concise attempt to capture an analogy between Magritte’s surrealist painting and music:

In Magritte’s paintings or dreams all elements are taken from reality. Relationships in which these elements remain among themselves, from the point of view of this reality, are abnormal, although from a different point of view, they do not have to be meaningless. That’s how it can happen with music, if for example we randomly cut Frescobaldi’s ricercars into small pieces, then glue them contrary to their original meaning, but — let’s say — according to their length, from the longest to the shortest (Szymański, 2006: 85⁴).

The composer calls his own way of composing a two-level technique or surconventionalism⁵ (Szymański, 1993: 134), but sometimes also meta-reflection, meta-output, music with a distance to tradition. Some of his statements about contemporary or his own music surprisingly coincide with what theorists write about intertextuality, for example Gérard Genette about literature in the second degree (Genette, 1982), so his poetics declared could be called intertextual.

Paweł Szymański’s output in general

I am having a fragment of Paweł Szymański’s output analyzed (Kostka, 2018a, b), so I can say that his intentionally intertextual musical pieces are based on two sets of incommensurable rules. The first set is called historical, because it consists of compositional rules used to create a structure in a historical style. Although the musical style is here the most important, some structures have additionally specific forms, such as fugue or *sarabanda*, and contain some minor stylistic deviations, such as a long pause in the middle of the piece in baroque style. It must be emphasized that the composer creates these structures himself (does

³ Author’s translation.

⁴ Idem.

⁵ Surconventionalism is a neologism invented by Paweł Szymański and Stanisław Krupowicz, which means a musical style analogous in certain respects to Surrealism.

not borrow them from previous composers). Taking into account Ryszard Nycz's three intertextual ranges: text—text, text—genre or style (architext), text—reality (Nycz, 2000: 79-109), I have to say that Szymański clearly prefers the second type. Although structures are maintained in many styles from the Middle Ages to modernism, the composer prefers baroque and classical ones. The second set of compositional rules is called abstract. It includes all ideas aimed at transforming the historical structure into a new work. The set is divided into three subsets: (1) rules concerning free or algorithmic extension of the historical structure (e.g. leading to multiplication of vertical components with their simultaneous spreading); (2) rules transforming the already widened structure, i.e. the second-level structure (e.g. introducing pauses in place of some vertical components); (3) rules for “decorating” the final sound material (e.g. systemic use of dynamics and articulation).

These incommensurable sets of rules, coming from different times and places and involving completely different compositional activities, bring new texts with easily perceived discursive interference on the surface. The combination of materials and techniques of various provenance does not take the form of collage, in which a passage in one style is followed by another in a completely different style. Instead, it forms a historical and modern synthesis with varying proportions of resources over time. Intertextuality in Szymański's compositions is global, running from the beginning to the end of the text, moreover, of a structural nature. Manfred Pfister calls this kind of reference a “strong” form of intertextuality (Pfister, 1985: 19). It should be emphasized that some of Szymański's works are created almost exclusively from the pitches of the historical structure, which now are deployed in radically changed syntax. This syntax usually takes two forms: extending over time from grammatical to non-grammatical or in opposite direction and broken into two plans: grammatical and ungrammatical. The discursive interference that manifests itself on the surface of works is always subordinated to a formal concept. At first glance, these works seem very cohesive and almost indivisible. When looking more closely, however, we notice a number of sections or episodes passing from one to another without any distinct *caesurae*. All the works have a profiled introduction and also a profiled ending, and the middle sections or episodes are distinguished on the basis of changing proportions between historical and modern means.

***Miserere* for voices and instruments (1993)**

As examples of Paweł Szymański's intentionally intertextual music, I am discussing here two works which are synthesis of medieval and post-medieval musical conventions with modern techniques and timbres. The first work is *Miserere* for voices and instruments (1993). In the language layer of *Miserere* there is a Latin text, starting with the words “*Miserere mei, Deus, secundum magnam misericordiam tuam*”. As is well known, it is very famous Psalm 51 (Septuagint 50) from *The Book of Psalms*, many of which are linked to Israeli King David who probably lived around 1000 years BC. From the late Middle Ages till today *Miserere*, together with six more penitential psalms, has been one of the most popular texts, frequently used in various liturgical traditions, because of its spirit of humility and repentance. Paweł Szymański uses all nineteen paired verses of the psalm and additionally repeats some words or even whole paired verses. The entire text is addressed to omnipotent God. The lyrical “I” repents and expresses sorrow for sin; it is extremely humble and conscious of its frailty. The sinner talks about his conviction that all men are sinful and that evil deeds are an integral element of human life which sometimes cannot be avoided. However, he is certain that God can forgive his sins and therefore begs Him for mercy, at the same time assuring Him that if his prayers are heard, he himself will be converting other sinners.

The musical layer of *Miserere* — intended for solo bass, men's choir (two countertenors, two tenors, two baritones), vibraphone, harp and four cellos — is composed of nineteen sections, but not always a section includes a couple of verses. There are nine solo bass sections and ten choral-instrumental sections which alternate after each other. Regardless of the kind of section, the music flows slowly and regularly in 4/4 meter, in very quiet dynamics.

Solo bass sections are very short and very similar to each other. All of them are composed in the mode of a Gregorian chant, based on the Gregorian psalm tone with dominant F and *finalis* D, with the exclusion of the so-called *initium*. In contrast to them, the choral-instrumental sections are more complex. To understand these sections, we should first know that all of them have been derived from an initial, tonal and chord structure which consistently and progressively modulates throughout the circle of fifths. Szymański discusses about it in an interview as it follows:

My intention, which I was trying to solve on a technical plane, was just to give the impression that something is at the same time physically standing still [...] and changing its position and moving. [...] This is done so that if you removed these chant verses, it would turn out that all this music creates a consistent, indivisible whole: a harmonic structure, which consistently modulates on the whole circle-of-fifths progression. But it has its own segments that do not coincide with those segments that have been allocated to the segments of text (Naliwajek-Mazurek, 2016: 17⁶).

After analyzing this composition, I can add to this initial structure three other information:

- 1) the model group of chords is maintained in D minor with modulation to A minor at the end;
- 2) the model progresses through the following minor keys: D—A—E—B—F#—C#—G#—D#—A#—F—C—G;
- 3) modulation throughout the circle of fifths is repeated up to six times (the beginning of the initial structure falls in bars 1, 44, 78, 106, 143, 182), and the last circulation ends in the middle of the circle (i.e. in G# minor, a tritone higher than at the beginning).

All choral-instrumental sections of *Miserere* were created exclusively from the pitches of this initial structure, but in a very specific way — by assigning three different sets of pitches to three execution groups (a choir, a harp with a vibraphone, four cellos). In addition, the initial structure has been stretched over time by the use of three different rhythmic formulas (a formula for one execution group). By imposing these abstract compositional ideas on the historical structure, three distinct layers were created. The choral layer is similar to the solo bass sections and recalls a process of achieving a sense of balance or stability. The two instrumental layers modulate all the time throughout the circle of fifths and recall a process related to pursuing a path toward some goal.

Six choral voices use in total only six pitches: D, F, A, C, E, G, which are the components of D-minor and C-major chords (a tonic and a VIIth degree chord in D-minor key). Individual sounds are assigned to particular voices in the following way: D — baritone 1, F — baritone 2, A — tenore 2, C — tenore 1, E — contratenor 1, G — contratenor 2, and do not change their positions till the end of the composition. All choral voices are written in a counterpoint technique of *nota contra notam* in monotonously running quavers. Each section containing

⁶ K. Naliwajek-Mazurek's translation.

these voices is composed according to one schema: a whisper, repetitions of six pitches, a whisper (these are three grammatical units of this layer).

The parts of the harp and the vibraphone are the closest to the initial structure. They are composed mainly of grammatical items each two bars in length. In the duration of each two bars individual pitches consolidate one minor key and modulate to the key of a fifth higher. The parts of the harp and the vibraphone are constructed in a mechanical way. The harp uses only pitches from the first set: D, E, F, G, A, C, and plays them in the rhythm of septuplets with some pauses. The vibraphone uses only pitches from the second set: D+, F+, G+, A+, B, C+, and plays them in the rhythm of crotchets with dots. It is worth emphasizing that the sounds of the vibraphone are not produced with the use of a stick, but by a glide of a bow.

The parts of the four cellos are also divided into grammatical items, each two bars in length, but are formed in an entirely different way. They begin from determinate pitches and then change into *glissandi* going up. The pitches of every two bars are subsequent semitones: D, D+, E, F, F+, G and so on. It means that every four bars which determinate the pitch of the cellos meet the first step of the minor scale used in the harp or vibraphone part. In the outer sections of *Miserere*, the *glissandi* up are performed in unison, but in the middle ones they mix with *glissandi* down, wavy *glissandi* and long-lasting pitches.

Three Pieces for three recorders accompanied by a metronome (1993)

The second Paweł Szymański's work chosen for discussion here is *Three Pieces* for three recorders accompanied by a metronome (1993). The work evokes associations with the music of late Middle Ages and renaissance. These associations are the result of both instruments and musical material. Nowadays recorders are encountered mainly in ensembles performing early music and strokes of the metronome imitate here beats of a drum, which was also used by early music ensembles.

The first of the three pieces, to be performed on alto flutes, is maintained in 2/4 meter and semiquaver rhythm. Three motives, with the length of 7, 8 and 9 semiquavers respectively, have been based on pentatonic, semitonal scale *a, h, c, e, f*. An important element of the second motive is a trill which, in the *imitazione della natura* practice, could imitate a birdsong. Each motive has been placed within one of the three voices, and is repeated there a couple of times, in accordance with the principle of the Lowest Common Multiple of three integers, in this particular case LCM (7, 8, 9). The calculations show that the 7-semiquavers motif appears 72 times, 8-semiquavers — 63 times, and 9-semiquavers — 56 times. The syntax of musical structure based on such idea seems to be ungrammatical with regard to early music. Motives moving in a mechanical way enter all the time into new relationships, resulting in sound combinations which are sometimes consonant, and occasionally dissonant. The composer imposed two further ideas on such original structure: he replaced some sounds by pauses, and some other sounds are equipped with various articulations. It is significant that he did not introduce dynamic signs, which refers to the old practice of composition.

The second miniature, to be performed in piccolo flutes, is maintained in 3/8 meter and possesses up to seven various motives, each with the length of one bar. Among them there are four melodic motives, including two semiquaver and two punctuated ones, and three quaver motives, each with the repetition of a sound. The pitches of all the motives: $d^3, e^3, f^3, g^3, a^2, cis^3$ constitute a D-minor harmonic scale, without the sixth degree. The musical structure is a 3-voice one, with the length of 80 bars. Each bar is a result of quasi-combinatorial operation on motives. The following two principles are observed within each bar: the semiquaver and

punctuated motives cannot meet, and the number of motives with sound repetition can be from one to three. The ultimate structure is characterized by numerous *unisono* moments and displays a tendency to move from melodic motives to motives with sound repetition.

The third of the three pieces, to be performed on alto flutes, runs in the 3/4 meter and is based on three motives in a pentachord scale, composed of the pitches: $g^1-a^1-b^1-c^2-d^2$. An interesting thing is that the opening motives are materially identical but differ by the length of the highest pitches; as a result, the length of these motives is 10, 12 and 14 semiquavers respectively. The structure of this composition was formed following similar principles as in the case of the first composition (i.e. the principle of the Lowest Common Multiple of three integers), which in this case is LCM (10, 12, 14). The whole structure has 35 measures, the shortest motif appears 42 times, the average length is 35 times, the longest — 30 times. In the middle part of the composition the mechanical structure passes through melodic-rhythmic modifications, but the length of the motives remains unchanged. Similarly to the previous miniatures, the old musical means collide here with modern syntax. In addition, Szymański decorated motives with articulations and placed them in lower registers than in the first miniature.

Final notes

Intertextuality is a general condition of meaning and gives particular works a high degree of hermeneutic vitality. So what does each of Szymanski's works described here mean? Because *Miserere* is a complex and multi-layered work, I intend to explain its meaning using Lawrence Zbikowski's latest's theory appropriate for such a work (Zbikowski, 2017: 167-200). In his cognitively oriented book on musical grammar, Zbikowski writes that when music flows simultaneously with words, they both create a conceptual blending. We must therefore answer the question: how the concepts activated by the music of *Miserere* interact with those activated by the words of *Miserere*? One way to account for this correlation is through a conceptual integration network (CIN), composed of four mental spaces: generic, words, music, and conceptual blend. The generic space could be expressed by a following sentence: Due to ethics a human being is able to pursue to elusive perfection. The words space is structured by features as: (1) intimate speech of the sinner, (2) humility and repentance, and (3) high style. The music space is structured by two kinds of sections alternating each other: (1) Gregorian chant sections (i.e. sonic images of achieving a sense of balance or stability), and (2) choral-instrumental sections (i.e. sonic images of moving and staying simultaneously). The blended space of *Miserere* is a result of interaction between words and music. In my opinion, it is composed of two following images: (1) the sinner is serious, self-controlled and calm, because he reaches out to omnipotent God; (2) the sinner is filled with a contradiction: on the one hand, he is conscious of his frailty, on the other — hopes to be able to pursue to perfection.

While looking for the meaning of the *Three Pieces* for three recorders accompanied by a metronome, we find that we do not need to use any complex theory. This rather simple instrumental piece does not provide readable or straightforward message, but meaning similar to those which occur at other Szymański's instrumental works, as well as at surrealist novels, films, paintings, and so forth. For me, each short piece of this set has “vibrating meanings”, meanings with a positive character. Listening to the miniature, I perceive something that is known and unknown at the same time. It is a kind of an intertextual game between old elements (medieval motives and timbre of flutes) and new ones (new musical syntax and

timbre of metronome). One can make here the reference to the composer's philosophy and say that *Three Pieces* are a symbol of our experiencing of the world.

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'You will grow to hate emails from me': composing in a remote [digital] collaboration

Amy Mallett¹

Abstract. The practice of studying collaboration within a virtual setting is a relatively new approach to arts research, but one that is already informing new perspectives on collaboration, as multinational teams become increasingly prevalent across many creative fields. For the artist-researcher, the asynchronous nature of remote idea exchange offers a valuable opportunity to reflect upon and develop both their collaborative skill and artistic process. This paper recounts the UK-based author's remote, trans-global partnership with Canadian writer Gary Swartz in the composition of music for musical *Whispers of the Heart* (2014). A mixed-method approach is outlined, involving triangulation of findings from a discourse analysis of email correspondence, composer notes and co-collaborator interview. Textual analysis of correspondence recorded the frequency of five types of exchange and suggests the importance of 'small talk' in establishing a relationship conducive to positive collaborative interchange. A retrospective review of the creative process highlights how periodical email and digital file exchange can provide objective space in which to digest and cogitate feedback given. It is further argued that by effectively exploiting the contained environment of a remote [digital] collaboration, auto-ethnographic study can facilitate the identification of enablers and barriers to collaborative practice, and also go some way to de-mystify and develop the composer's creative process.

Keywords: Composing; collaboration; discourse analysis.

Introduction

Advances in technology have made it increasingly possible for artists to collaborate across geographical locations and time zones. Technologies such as email, video chat, file sharing and bespoke real-time platforms enable creative exchange and present wider opportunities for working with new collaborators. Whilst this approach to collaborative working can bring technical challenges, it can also be a valuable way to allow creative teams to connect where personal interchanges are not possible due to practical or economic reasons (Stewart, 2015). Interaction may take place in real-time (where all co-collaborators are 'present' such as a video or conference call, chatroom, or virtual environment) or in the form of asynchronous correspondence (such as where email and/or file exchange is the preferred tool).

For the composer-researcher, participation in a remote collaboration offers a unique opportunity to scrutinise and document their compositional and collaborative journey with minimal disruption to the creative process. This article charts my own experiences of one such journey, through a remote, trans-global partnership with Canadian writer Gary Swartz². I will argue that through the application of an appropriate methodology, the asynchronous nature of a remote digital collaboration can offer the composer the chance to not only

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² A retired advertising copywriter, Swartz had previously written musical *Country Love* (available on StageScripts.com) and play *Tears Like Rain*. He had become aware of my research interests through my membership of musical theatre networking organisation Mercury Musical Developments.

examine and reflect on their craft and process, but also to enrich and develop their creative practice.

Methodology

The practice of studying collaboration within a virtual setting is a relatively new approach to arts research, but one that is beginning to inform new perspectives on creativity. Researchers such as Turner and Schober (2007) and Gerben (2012) have acknowledged the value of the virtual environment for studying collaboration. Their studies apply methods of language coding and textual analysis to chat room transcripts to identify language and behaviour conducive to effective collaboration. Research of this nature exploits the remote collaboration as a contained environment in which carefully designed methodologies can facilitate a vast amount of valuable evidence. This evidence can take the form of quantitative data such as textual or discourse analysis, more qualitative insights (from interviews or observation) or a mixture of the two.

A significant risk to any auto-ethnographic approach is the intrusive nature of self-scrutiny, and its potential to both interrupt and influence artistic activity. Knowing that communication, processes and artistic outcomes are subject to analysis can influence how co-collaborators interact, in particular causing artists to ‘tone down’ our responses or not behave intuitively. In order to minimise such manifestations of the ‘observer effect’, for this study a mixed method approach was applied, involving triangulation of quantitative and qualitative findings from a discourse analysis of email correspondence, composer notes and co-collaborator interview.

The study focuses on a ten-month period during which I wrote the music for 13 songs for Swartz’s pop/rock/blues musical *Whispers of the Heart* (2014)³. The creative process was facilitated through the exchange of email and audio files between myself (based in the UK) and Swartz (in Vancouver, Canada). Throughout the project, as well as documenting the musical material as lead sheets, I recorded my creative thought processes as written annotations. These notes included details of *stimulae*, musical/literary influences, reasoning for creative decisions, and any revisions made. In order to minimise the detrimental impact of other observational methods such as protocol analysis (Collins, 2007), I self-interviewed as soon as possible after each song was completed. Notes were kept succinct to provide a high-level process map of the musical decision-making process. This auto-ethnographic adaptation of the Stimulated Recall⁴ approach to data collection captured the key steps in my decision-making processes and also recorded how input from my co-writer was applied.

When the work was complete, a retrospective study of correspondence between Swartz and myself was carried out in the form of a discourse analysis. This analysis noted instances of five types of exchange in the written statements of each collaborator:

1. **Small Talk/Relationship Building** (Not related to tasks and usually referencing elements of our personal/professional lives)

E.g. “I lived in Japan for many years...”

“I may well end up cutting the lawn this afternoon”

³ *Whispers of the Heart* is a four-hander musical in two acts that examines the relationships of two career-minded couples, allowing the audience to decide (during the interval) whether one of the couples stays together or splits up. Swartz had already written the script and lyrics when he approached me.

⁴ In the Stimulated Recall approach, a third party interviews the subject who has undertaken the experience being investigated using various stimuli as cues to stimulate recollections of the process.

2. **External Musical References** (Usually in the form of hyperlinks to video or audio recordings)
 E.g. “The Fabulous Baker Boys song was ‘Making Whoopee’”
 “I recently discovered this song that driving feel might translate well with Rich”
3. **Managing Expectations** (relating to timescales and delivery of musical material)
 E.g. “I’ve got a really busy week coming up” “I’ve got a house full of toddlers this week” “Just wanted to make sure you are still alive”
4. **Positive/Encouragement** (Where ideas or artistic efforts are praised) E.g.
 “Works for me.”
 “Seems like we are on track.” “I like it. Lots of nifty stuff in it.”
5. **Veto** (Where musical ideas were rejected or deemed inappropriate to the project. Not including where permission was first sought to make edits)
 E.g. “I think it has to stay ‘we’”
 “It could maybe sound a bit more “Kiss my Ass!””

Findings in each category were compared between co-writers and also to our song productivity throughout the ten-month period. Finally, an email interview was conducted with Swartz, with questions formulated by cross-referencing findings from textual analysis, composer notes and relevant theoretical background.

Findings

Within any collaboration, the initial stages of a project will include a period of establishing scope, roles and responsibilities, as well as gaining an understanding of the motivating factors for working together. In their study into online team behaviour, researchers Tseng and Yeh argue that familiarity, commitment and team cohesion are necessary to build a foundation of trust in a virtual team: “It is advantageous to discover the struggles and conflicts earlier, to facilitate the open communication channel in teams, and to encourage individual accountability” (2013: 23). In the case of *Whispers of the Heart*, discourse analysis allowed for a useful and detailed insight into this initial ‘scoping’ stage. Analysis of our email exchange shows that the first two months of our discourse yielded a high level of ‘Small Talk/Relationship Building’ statements on Swartz’s part (see Figure 1). Contrastingly, ‘Managing Expectations’ statements were my most frequent approach, perhaps reflecting our ‘client-composer’ roles, despite lack of formal arrangement.

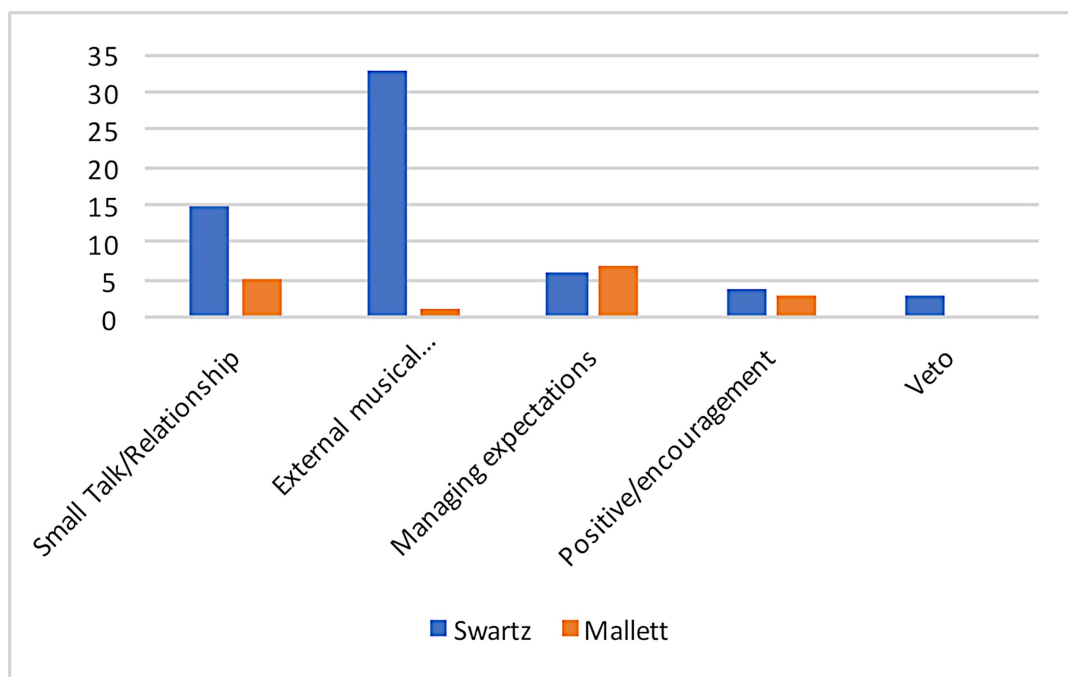


Figure 1. Frequency of statement types in email correspondence Feb-Mar 2014

This ‘scoping’ phase was also vital in establishing a musical language from which we would go on to develop a collaborative compositional process. As a non-musician, to illustrate musical parameters Swartz’s approach was to provide me with a large pre-prepared list of existing songs as starting points for the musical style, feel and form of each song in the show. This was in the form of a verbal list referencing YouTube videos given during a Skype conversation, followed up in a subsequent email containing a series of hyperlinks to video and audio recordings of existing songs. This use of ‘reference’ or ‘temp’ tracks is a strategy often used in the film music genre to create a ‘blueprint as well as a barometer’ for musical ideas (Sadoff, 2006: 180). Film composers such as Kim Halliday (2013) and Jerry Goldsmith (in Karlin and Wright, 2013: 40) advocate their use in order to bridge the gap in musical knowledge between director and composer. Whilst a useful place for a composer to begin, it has also been argued that this approach can present potential problems for a composer who values their own compositional voice or likes to avoid pastiche. Some film directors feel that temp tracks can limit composers, and indeed, some composers choose not to listen to them (Karlin and Wright, 2013: 30). I found this adaptation to my own compositional approach strangely liberating; a challenge to deviate from my usual sources of stimulus but invigorating to be freed from the imposition of originality. I took care to record Swartz’s narrative surrounding each track in order to ascertain which aspects of the song he was inspired by. To avoid direct pastiche of the reference tracks I had been given, my notes show how I identified simple characteristics of each track, using a musical feel, or limited chord progression as a starting point from which to build via my own compositional voice.

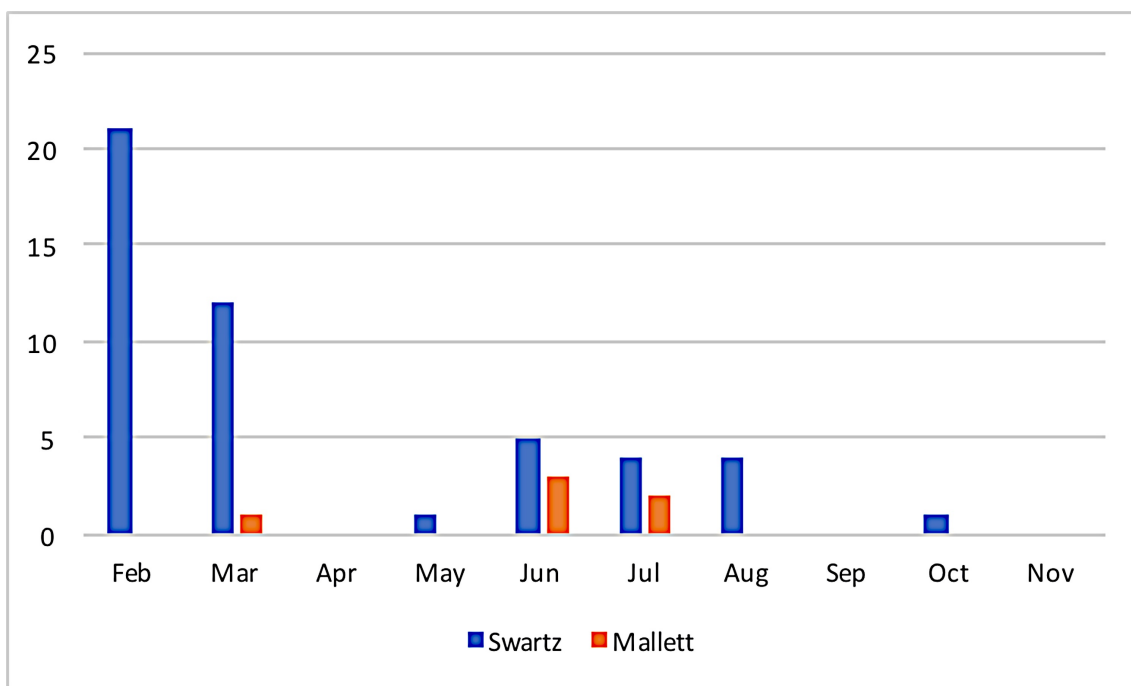


Figure 2. Frequency of External Musical References

Discourse analysis shows that the majority of external musical references (see Figure 2) were used at the beginning of the writing process, with additional references given later on during the project when Swartz wanted to signpost other aspects of the musical material, or when I wanted to clarify musical direction. As we progressed through the project, a musical aesthetic emerged which incorporated both the influences of existing language across rock, pop and blues genres, but also our collective authorial voice. Swartz retrospectively observed the advantages of this approach and also highlighted the value of on-line tools such as YouTube to increase the accessibility of musical ideas and aspects of performance: “So while I could not necessarily describe in words or technical terms, what I thought some, not all, but maybe many of the songs wanted, or needed, or would be happy with, I could search YouTube and ultimately provide links to performances of songs that I felt had some attribute that would work for us.” (Swartz, 2016: 4).

Again, email correspondence shows that the only significant instance of veto in the project was in the very early stages, when my first attempt at a song was rejected outright by Swartz. At the time, this was a blow that almost made me pull out of the project. However, with hindsight, this misunderstanding and subsequent reconciliation of a mutual musical language could only have been achieved through a period of trial and error, and was efficiently dealt with via the openness and transparency of our textual communication. The advantage of not composing side by side with my co-writer meant that I could digest and consider my co-collaborator’s feedback at my leisure. This supports the findings of Phalip et al (2009) that although written feedback can be harsher than the potentially more ‘considerate’ face-to-face delivery, asynchronous modes of communication can alleviate the negative impact of criticism by offering time and space to reflect.

Following this vital, and significant ‘scoping stage’, levels of ‘Small Talk/Relationship Building’ statements continued consistently from both sides throughout the creative process. In this way, by sharing details about our home lives to each other within the friendly subtext of our emails, we were implicitly providing an on-going commentary of our availability and ability to make progress with the work. Over time, a mutual creative flow emerged, and

Swartz and I could consciously enjoy the advantages of the remote nature of our collaborative partnership. This perspective is neatly corroborated in Swartz's interview response where he says: "We could work at our own pace, whenever the time was available, and the mood was right." (Swartz, 2016).

Discussion

The process of writing music for *Whispers of the Heart* has provided a useful perspective on the advantages of remote collaboration as both a model for artistic partnership, and an environment for collaborative research. The remote [digital] collaboration offers the composer many benefits, if implemented with an approach that includes appropriate technology, considered communication, and a level of conscious self-awareness.

In terms of my own compositional practice, as well as encouraging me to view negative feedback as an opportunity to create something new (Sutton, 2012), the challenge of relating Swartz's diverse musical references to the lyrical structure of each song required a new way of approaching a songwriting task which has enriched my craft. I was able to let go of my own self-imposed constraints, allowing for a more efficient and emotionally detached approach to composing that is perhaps more suited to a commercial environment. This supports the views of researchers such as Pejrolo (2014); that the remote collaboration can be an opportunity to enrich the composer's musical palette.

If strategically adopted, the asynchronous nature of email and digital file exchange offers thinking space to each party that can both aid the creative process and allow for greater reflection on the formatting of responses. An email may be blunt and lacking in the subtle nuances shared with face-to-face verbal exchanges, but it can be read at the recipient's leisure and re-visited if (as in this case) re-interpretation is called for. I would suggest that a purely asynchronous approach can be successful if co-collaborators are mindful of the directness of the written word as a means to convey and receive feedback. This in turn can enhance the collaborative skills of those involved, essentially making them more effective collaborators.

Adopting the role of composer-researcher for this project required a more consistently reflective approach that I believe enhanced my own skills as collaborator. This is a phenomenon also observed by Biasutti (2015) who found that completing surveys reflecting on collaborative interactions helped participants develop an awareness and consciousness of their own approach to collaboration, leading to positive changes in behaviour: "The participants reflected on their knowledge, evaluated the progress of the activities, and regulated their cognitive resources based on the roles of their bandmates." (2015: 60). Similarly, in researching the collaborative efforts of design students, Turner and Schroder (2007) observed that assessing the behaviours of others increased self-awareness of participants, and in turn, encouraged interactions more conducive to team endeavours: "The mere fact of evaluating each other increases behaviours that get higher ratings and decreases behaviours that get lower ratings." (2007: 9). These findings would indicate on a wider level that taking part in research into communal creative activity is beneficial to the development of collaborative skills in the individual and the creative team as a whole.

As expected, a mixed method research design proved a structured and focused approach to providing an ethnographic perspective of the impact of this model of collaboration on the compositional and collaborative process. The action of taking notes during the compositional process was a change to my usual working practices, which brought advantages and challenges. Not reliant on technology or requiring lengthy transcription time, the action of

putting thoughts into words and then recording on paper required a periodic pausing of cognitive processes, and I believe is only affective if incorporated with a high degree of honesty inquiry. Rather than interrupting creative flow, this method induced a higher level of subjective consciousness of both my decision-making processes and collaborative interactions, and allowed a valuable insight into previously uncharted creative practices. This allowed me to question my motivation and musical direction, which I believe made me less likely to choose familiar avenues. I became more aware of empirical influences and felt more able to combine experience with instinct. Through writing the music for *Whispers of the Heart* this self-reflective approach became embedded within my creative practice, and indeed has endured beyond the end of the project.

Conclusion

As suggested by Turner and Schroeder (Turner and Schober, 2007: 9) language coding and textual analysis can provide a tangible way to find meaning in collaborative discourse. In this case it provided a structured approach to analysing the substantial data produced during ten months of email exchange. This simple form of language classification was successful in revealing trends in types of language used by each co-collaborator, and would be an equally valuable approach to widening perspectives on collaborative interactions in larger groups. In this project, statements relating to creative decisions (i.e. lyrical/instrumental suggestions) were not included due to time constraints, however could be included in future studies into compositional process. A more detailed study into collaborative creative decisions may be enabled by observing co-collaborators within a synchronous virtual environment, where decisions are made more immediately, and communications recorded through forum-style interactions. A similar set of language classification could be developed to map and record how interactions affect the musical creative process.

Finally, ethical considerations in this type of research remain paramount. Self-scrutiny is not for the faint-hearted, and requires honesty and integrity on the part of the auto-ethnographer, and consent of other participants. This research project would not have been possible without my co-collaborator Swartz's willingness to be scrutinised, and the openness of his interview responses provide a qualitative context within which to reflect on the rich experience of this remote collaboration. Rather than 'growing to hate' Swartz's emails, as he jokingly predicted right at the beginning of our project, they have provided a unique perspective on my creative practice, and the development of a fruitful working partnership.

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A CODFISH IN THE SKY WITH SALT! The representations of Portuguese media about the relationship between rock'n'roll music and drug abuse (1980-2018)

Ana Martins¹ and Paula Guerra²

Abstract. Since early, music in general and rock music in particular became crucial in young people's lives (Mulder et al, 2009a/b). According to Vuolo *et al* (2014) and Calado (2007), music mirrors the main social and cultural events that happen in our life, like our feelings, our problems and our substance uses. In this sense, the music's and pop stars potential influence is so big, that some researchers believe that some music genres can be a stimulator for drugs use (Mulder *et al*, 2009a/b). The musicians themselves are frequently linked to substance and drug abuse (Miller & Quigley, 2011). Recently, Ian Inglis (2007) wrote about musical legends, drug abuse, rock and roll overindulgences and bohemian life in rock music artists. In fact, these myths are very important in fans day life, particular in teenagers' fans, when search for a lifestyle model. This scenario happens with different variations in all occidental countries and Portugal is no exception for that (Guerra *et al.*, 2016). And we usually receive the information about the relationship between music and drugs mainly by the media. So it's important to analyze and think about the way Portuguese media portray rock music and drugs use and abuse.

Keywords: Rock music; media; drug abuse; Portugal.

Introduction

Rock performances were popularly associated with all forms of riot and disorder – from the slashing of cinema seats by teddy boys through Beatlemania to the hippie happenings and festivals where freedom was expressed less aggressively in nudity, drug taking and general 'spontaneity' (Hebdige, 2002: 162).

As we may know, rock music has been linked to rebel and risk behaviours, as well as experience and sensation seeking, since her setting in the Anglo-Saxon scene (Guerra et al., 2016). Also very important in these behaviours are the supposed substance use and abuse popularly associated with the rock subculture. About the rock subculture itself, we can talk about it as a youth culture, because the emergence of rock as a post-subculture in the national and international panorama has been associated with youth. In other words, rock has been and remains a juvenile phenomenon, in the eyes of many, since its premises of rebellion and transgression merge with the instability, flight and search of adolescents for an ideal that

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meets their feelings of revolt. Paula Guerra (2015) considers rock subculture as an ‘absolute beginner’, insofar as the emergence of this musical genre in Portugal brought with it a break with the socially established standards to date, giving rise to the birth of a new musical experience, which came to be absorbed by a vast group of social actors, namely located in the typically young age groups. In this sense, for the adolescents, the musical manifestation of rock represented the promise of a new social panorama, where socioeconomic problems would be overcome by the recent freedoms provided in the various dimensions of individual and collective life. So, the youth is an important age group when studying this kind of subjects.

According to Vuolo et al (2014), the lifestyles of these young people, as well as their feelings, fragilities, experiences or consumptions, end up being portrayed in the songs they listen to. For this reason, many authors believe that rock music and its protagonists can influence, in some way, receptivity, maintenance or withdrawal to certain consumer behaviours, especially of illicit substances. Even, because the rock musicians themselves are often associated with this type of consumption. In this particular field, there are countless links about these subjects in rock lyrics, music videos or performances, as we can see in *Lucy in the Sky with Diamonds* – The Beatles; *Brown Sugar* – The Rolling Stones; *Needle And The Damage Done* – Neil Young; *Light my Fire* – The Doors...

In this sense, some authors have discussed about the illegal substance abuse and the bohemian life of rock music icons, as these myths are very important in the lives of fans, especially younger fans, as they search for models for their lifestyles. This happens a bit throughout the western world with different variations, of course, and Portugal is no exception. And the media play a crucial role in the transmission of these alternative behaviours and lifestyles.

This type of deviant behaviour in relation to socially established norms has gained increasing importance in Sociology, especially in the main urban and exclusion issues at the present time. Particularly relevant to these questions is the analytical axis of Marginality and Deviation and, within this, the paradigm of symbolic interactionism, “[...] as an explanatory theory of innovative and precursor clipping in the explication of the mechanisms of social domination” (Guerra, 2002: 15). In fact, the importance of the paradigm of symbolic interactionism for this paper is related to the atonement it gives us of the mechanisms of production and reproduction of this type of behaviour, understood by common sense, as resulting from pathological characteristics present in individuals and easily identifiable. Thus, in the social-day-to-day interaction frameworks, if one or more individuals show behaviours that do not meet socially shared norms, the organizational premises lead to the reactivation of sanctions that, in this particular context, result in stigma, labelling and appropriations about the protagonists and actors of the national rock subculture. “Only when the violation of the norm is recognized and designated as such, giving rise to a process in which the transgressor takes the label as a stigma and confirms it, repeating it, is that, in good rigor, one can speak of deviant behavior” (Pinto, 1994: 144).

In short, in contemporary Portuguese society, musicians and other professionals associated with the rock universe, carry with them a career of labelling and stigmatizations related to risky behaviours, which, from the outset, gives them a position of discrediting towards other social actors. And in this subject, the media play a key role in the dissemination of this kind of social stereotypes. So, it’s urgent to deconstruct this reality and reflect about her complexity and multiformity. Last, in terms of methodology, this paper uses documentary analysis and secondary data.

Thinking over the 'media portraits'

Using the press as a source of information about the mechanisms of (re)construction of societal deviations, we proceed to an exercise of application on the thesis of interactionists. Thus, we analyzed some extracts from five examples of online national press reports that relate this type of music and illicit substances. The empirical material that was the basis of this analysis consisted of extracts from five articles about the relationship between (rock) music and illicit substance use in different online media agents (specialized press and general press) and in different years (*i.e.* 1997, 2007, 2011, 2015, 2018). This collection of information based on a convenience selection was restricted to the search for five distinct examples that met our objectives of exemplifying the application of the thesis of symbolic interactionism to this particular article.

From a symbolic point of view, this association between rock music and consumption of illicit substances brings together domains of exclusion and rock assumes itself in the collective imaginary as a subculture that shows a greater practice and experience of deviant behaviour. In this way, the musical events that involve this musical genre, as well as the protagonists of this subculture are often represented in political, social and media discourses, as having some relation with the consumption of illegal substances. This question is inextricably linked to the fact that the crystallization of the image of rock musicians is based on negative events (such as incivility behaviours, for example), leading to the creation of these stigmatized individuals, enhancing their growing rupture with the “normal” society. The way society negatively identifies the participants of the rock subculture results in the loss of collective self-esteem and consequent reproductive worsening of the situation by the rock music artists and fans.

In general, given these five examples, we can see that we have two short, (Diana.fm & Correio da Manhã), two medium / large (Blitz & Sol) news pieces and a report developed in depth, which is the largest of all articles (Observador). We'll quote then an extract of each example translated from Portuguese language and a brief analysis.

1st example quoted: Liberalize vs. Forbid – 19th of July of 1997, Blitz

Liberalize, decriminalize, and maintain the prohibitionist policy? What is the best political choice for the drugs issue at the turn of the century? BLITZ interviewed the Minister of Justice, whose position of caution can be verified, but admits that society is moving towards the decriminalization of light drugs. We also spoke with Luís Patrício, director of the Taipas Center; Luís Fernandes, professor of psychology at the Faculty of Psychology of Porto and author of studies on drug addiction carried out according to the method of field study in Porto, as well as a study on the relationship between drugs and music; and we spoke with Ricardo Sampaio, president of the National Association of Young Physicians (Blitz, 1997³).

The Blitz is a specialized media in music. Founded in 1984, the Blitz started out as a newspaper, then turn on a magazine and now works only online. This example is from a report on the decriminalization of drugs in Portugal, in which one of the interviewees was Luís Fernandes, author of a study on the relationship between drugs and music in our country. The report discloses different points of view of interviewees about the liberalization or prohibition of illicit substance use in Portugal at the time. A number of possible political policies are proposed to be implemented in the country and comparisons are made with

³ Author's translation

policies adopted in other countries, notably in the Netherlands. Basically, all opinions seek solutions that do not involve an injunction prohibiting of this type of consumption. This conclusion may lead the reader to assume that, sooner or later, the consumption of illicit substances in Portugal will be legalized, since there are already several public entities that think this way. The fact that the interviewed assume that in the face of the threatening reality of consumption and sale of these substances in our country, (giving an example of their presence near the schools), the solution would be to work for the treatments and even legalization. This assumption ends up transmitting a sense of social insecurity to the readers and a concern about the future of the society with that freedom to consume that kind of substances. It is noteworthy that they interviewed Luís Fernandes, a researcher at the Center of Sciences of Deviant Behavior of the FPCEU and author of chronicles and works such as “The drug site” (1999) and that has been developing reflections on the phenomenon of drugs and their relation to music, namely rock music. It is also curious that this report is published in a newspaper specialized in music, which probably has more young readers than adults.

2nd example quoted: Odemira: GNR holds six people for drug trafficking in overseas operations of the Southwest Festival – 4th of August of 2007, Diana.fm

The GNR has arrested, in recent days, six people for drug trafficking and has filed 107 countersigns for consumption in the zone of the Southwest Festival, which runs in Zambujeira do Mar until Sunday (Diana.fm, 2007⁴).

DianaFM is an FM radio station from Évora, founded in 1986, which emits especially for the district of Évora and for the whole Alentejo. In addition to its online presence through a dynamic and up-to-date website, it also allows its broadcast to be listened to online. This is a story about an arrest by the GNR around the grounds of the Sudoeste Music Festival. The news reports, in addition to the arrest, that 107 people were identified for consumption of illicit substances, namely cannabis. It should be noted that this apprehension still happens during the festival, since the police actions were in progress already before the beginning of the festival and would remain until its closure. This is an example of news in which the media, the police and the political agents themselves associate this type of musical events with the consumption of substances, since there was a reinforcement of the police forces in the enclosure with an average of 120 military in each day. This type of news end up imparting a sense of insecurity, fear and concern in society, especially in parents whose children attend such events. And it ends up causing similar feelings in young people, whether or not they consume illegal substances.

3rd example quoted: Uncontrolled young people at drug parties – 21st of April of 2011, Sol.

There are more and more parties of trance music, in Portugal, where minors mix chemical drugs like MD and LSD. The situation in many other European countries is of concern to the European Union, which at a conference last month warned of the danger of a mixture of psychoactive substances. In Portugal, the authorities are also alert with these events that, with the arrival of good weather, multiply from north to south (Balasteiro, 2011⁵).

The *Sol* [Sun] is a weekly Portuguese newspaper that is on the newsstands on Saturdays, founded in 2006 and based in Lisbon. It was the first Portuguese newspaper to simultaneously launch a paper version at the same time as it went digital. This report addresses the lack of control of essentially minor young people at musical events, especially during the broadcast of electronic music. It should be noted that this report is quite extensive. Like the previous

⁴ Idem.

⁵ Idem.

example, this type of news presents a negativist approach around this type of events, which causes that the society quickly associates the consumption of drugs to musical events. And it addresses the issue as being a recurring situation, leading people to think that it will probably happen again in other similar events. To intensify this media alert, the report has testimonies of teenagers of both genders, who assume to consume one or several illicit substances, especially the hallucinogens. Although the Portuguese Institute for Drugs and Drug Addiction states that it has technicians infiltrated on the ground in order to avoid the excessive consumption of these chemicals, the report's own title ends up shocking, frightening and creating mistrust regarding this type of events.

4th example quoted: Seized 2,653 doses of drugs at summer festival – 9th of August of 2015, *Correio da Manhã*

The GNR announced this Friday that it seized 2,653 doses of drugs in the course of surveillance operations near a summer festival, held near the Montargil Dam, in the municipality of Ponte de Sor, Portalegre (Correio Da Manhã, 2015⁶).

Correio da Manhã is a Portuguese daily newspaper of the general type, founded in 1979. Like English tabloids, it is characterized by its sensational news. It is located in Lisbon and is the best selling newspaper in Portugal. In March 2013, *Correio da Manhã* launched a general television channel, called CMTV. This is yet another example of the detention of illicit substances at a music festival by GNR. But this time, the amount seized is much higher and concerns 2653 doses of drug. The news also tells of the detention of 37 people of different nationalities. The substances were from different types and have been seized, such as hashish, *liamba*, LSD, ecstasy, cocaine, opium and amphetamines. The GNR military also identified 128 people by consumption of the abovementioned substances and seized several prohibited weapons, all named in the news in question. From the title to the end of the story, it's all a shock to any reader. In addition to the huge doses seized, the newspaper makes a point of identifying what kind of substances have been treated and does the same with the weapons. This type of information tends to cause a real panic to parents whose children attend musical events, the young people who attend them and even the local community, where the event is located. Instead of emphasizing the presence of the GNR in the event, in order to promote a sense of security, the newspaper ends up giving prominence to the consumption of drugs and the possible violence involved in it.

5th example quoted: The 70's. When the drug ceased to be an addiction of artists and became the scourge of youth – 17th of June of 2018, *Observador*.

Suddenly, in the 70's, the drug ceased to be an addiction of artists to become the" scourge of our youth. "Prisons and judgments succeed each other. Parents are accused. And also is the rock music. (Matos, 2018⁷)

The *Observador* is a Portuguese electronic newspaper, whose first edition was launched in 2014. It is the only newspaper in Portugal that has a defined political tendency (Right-wing). In a virtually unique concept in Portugal, this is a fully digital newspaper, without paper edition. This report is the most extensive of all and addresses the drug issue in Portugal, from the 1970s to the date of its publication (June 2018). The important point is that the drug is no longer associated with artists and eccentrics, but has become a scourge of contemporary Portuguese youth. This report shows us some pages of a newspaper of the year of 1972,

⁶ Idem.

⁷ Idem.

which reported on the cover the detention of young Portuguese and foreigners for consumption and trafficking of narcotics. As we can see, and contrary to what many people think and say, this phenomenon has been present in Portugal for several decades. It is also worth noting that the news reports that these consumptions, which until the 1960s were limited to the wealthiest social classes, can now enter any home or school. The news shares several statistics and figures and accuses the first Portuguese great festival of music, Festival Vilar de Mouros, to have played a central role in the spread of addiction among the Portuguese youth. Another characteristic is that the music appears here already as guilty or great guilty of the scourge that is currently living and the approach given to the Festival de Vilar de Mouros is like a negative event for the country. More, the report referred a case brought to court, where some public figures of the Arts in Portugal were consumers. Faced with this situation, the parents of the 70's are blamed for their children's addiction, by this media. This blame ends up frightening the readers' parents about how they should educate and deal with their children, to avoid having this type of consumption.

Final reflection

Although these examples were very brief, it was possible to verify that the association between music and rock music in particular and the consumption of illicit substances is transmitted by the national media, in a non-impartial manner. This is because the way in which this news is presented to the public goes beyond the merely informative purpose. The fact that the national media and the security forces themselves are moving massively to musical events is already a sign of the mistrust they have about this kind of music-related events.

News about drug arrests by the Republican National Guard (GNR) – municipal branch of Portuguese police - at summer festivals is becoming more frequent, resulting in the spread of feelings of insecurity among young people, parents and the local community itself. Often, the media focus only on this type of dissemination and are not engaged in the dissemination of content about the events themselves, such as the invited artists, the economic impact on the community or the ecological actions developed by the organizations, among many other important activities. Somewhat like Cohen's study of how the Mods were portrayed in the British press, the same happens here, where this kind of subjects tends to be transmitted negatively or not so positively by the Portuguese media. In fact, this reality meets the search for sensationalism by the various media agents, who seek to always be one step ahead of the competition and sell more than the others competitors. In the examples presented, one of the media agents (*Correio da Manhã* Newspaper) is well known for its sensationalist content. On the other hand, political affiliations and orientations also sometimes speak louder and are reflected in the information produced. We also have an example that alludes to this tendency (*Observador* Newspaper). However, the use and abuse of this type of substance is not exclusive to music or rock music or even the arts in general. And national media should distance themselves from popular myths and focus on the facts and on a factual construction and deconstruction of the reality. To avoid perpetuating these social labels is crucial for the identity construction of their protagonists, in order to diminish in a squeezing way the stigmas that can haunt their daily lives and their social interactions.

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CMT's artistic-educative constellations and its music-making practice

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Abstract. The work of Companhia de Música Teatral includes performances, installations, workshops and training, among others, organized as “artistic-educative constellations” (i.e. different types of experiences that are related in conceptual and creative terms, exploring the boundaries of art, education and human development). Collective instruments and creative approaches (including improvisation and real-time composition) have been developed in several projects in order to allow for collective music making practices. This presentation is based in the direct involvement of the authors as creators/participants/observers in a series of experiences (held in projects such as *Opus Tutti*) and aims to report and reflect about the artistic and educational nature of CMT’s work and its implications towards establishing a continuum between community music and educative practices. By presenting an overview of CMT’s creative universe, we explain how the concept of “artistic-educative constellations” has emerged and how it continues inspiring our work.

Keywords: community music; educative practice; artistic and educative constellations; Companhia de Música Teatral; *Opus Tutti*.

Introduction

Companhia de Música Teatral (CMT) develops a regular activity since 1998. It was constituted with the intention of developing projects within the aesthetic designation of “scenic music” / “music theatre” and privileges Music as a starting point for interaction between various techniques, languages and possibilities for artistic communication. CMT has developed a pioneering work, articulating academic research, artistic production, technological creation, community involvement and the dissemination of the importance of musical experience and art in general on human and social development. CMT’s work has been presented in various formats as shows, workshops, medium and long duration projects, books, CDs, DVDs, and has been subject of investigation and publication on the academic field. With this article we intend to communicate the idea of “development of artistic educative constellations” as an aggregating concept for CMT’s actual and future activity. Section 2 describes the context of CMT’s existence and its scope, focusing on two background experiences that led to the later conceptual organization referred to as “constellation”: the creation and development of the Educational Service of Casa da Música program between 2006-2010, and the project *Opus Tutti* (2011-2014). Section 3 refers to the concept of constellation and its development within CMT. Section 4 presents CMT’s current “universe layout”, defining its objects and constellations, and exemplifying their usage in

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three particular constellations: *Opus Tutti*, *Gamelão de Porcelana e Cristal* (GaPC) and *Anatomia do Piano* (AdP). In Section 5 conclusions are drawn about the interest in using this model as a visual representation of CMT's projects throughout its existence, and proposals are made for new ideas into how the model can be manipulated, explored and developed, creating new analytical frameworks.

Context and Background

CMT's root is artistic creation, a field in which it has been developing innovative work reflected in a repertoire constituted of more than twenty original works, presented in Portugal, Brazil, China, Thailand, Finland, Poland, Belgium, France, Germany, Denmark, Norway or Spain. Exploration and creation of educative ideas has been also an essential component of its philosophical and pragmatical matrix. The concern in creating bridges between art and education it is still a current one, but in CMT's case it is more than a strategy: it is at the essence of CMT's creation and its founding members' careers, namely of the authors Paulo Maria Rodrigues and Helena Rodrigues. Paulo Maria Rodrigues initiated his path of artistic and educational experiences in England, prior to CMT, was the coordinator of Casa da Música's Educational Service and presently teaches at Universidade de Aveiro. Helena Rodrigues has devoted a large part of her academic research work to questions related with education and currently teaches at Universidade NOVA de Lisboa, where she's also the creator and director of the Laboratório de Música e Comunicação na Infância⁴ (LAMCI).

Since its first works (e.g. *O Gato das Notas*, 1998), CMT has been concerned with the creation of experiences transcending the mere fruition or contemplation, and contributing to awaken interest in discovering, questioning, acquiring tools of comprehension and creation of knowledge. Initially these ideas impregnated the artistic language of the shows that were created. Over time, however, the type of projects started to contemplate other types of formats through which we explored ideas such as projects with communities, participatory projects, educators' training activities, materials creation (DVDs, CDs, books) intended to deepen the artistic experience.

Consequently, this work has combined, in a balanced way, innovation and outreach, exploration and involvement, broadening and anchoring concepts, relevant ideas and authors, expansion and deepening. In the "artistic-educative constellations" designation, one finds the clarity and openness considered relevant to preserve the thinking and communication of our work. There are also metaphors inspiring us: the idea of a system in expansion, the idea of a poetical and simultaneously analytical sense that we can attribute to what we do, the idea of "bodies" with different nature that interact between them and that relate by a group of "forces" or "fields", in our case, of aesthetical or conceptual nature (Rodrigues et al., 2020).

According to Paulo Maria Rodrigues, the experience of coordinating Casa da Música's Educational Service (2006-2010) was determinant in forming the vision we have today on articulating artistic and educational questions. It was a fertile territory of experimentation and implementation of ideas, but also implied conceptual and reflective work that was later published and inspired successive developments (idem).

Another important step towards defining our current vision about the articulation of artistic and educative agendas was the creation and development of *Opus Tutti* - a project that aimed

⁴Laboratory for Music and Communication in Infancy (LAMCI; which is part of CESEM research centre at NOVA FCSH.

to develop good practices of artistic nature contributing to a better life quality in the early infancy - a partnership with LAMCI, supported by the Calouste Gulbenkian Foundation (FCG) in Lisbon.

Thus, it makes sense to review some of the ideas expressed in these two experiences, and from there understanding the role of CMT in that field.

The experience of Paulo Maria Rodrigues at Oporto Educational Service of Casa da Música

The conceptualization of an Educative Service (ES) generates questions regarding its definition, its role in society and its context within the institution. By definition, an Educative Service is an education agent, different than School due to its offer (specific to the institution, which might be a museum, a science centre or even a cultural centre), organization and goals. In effect, Educative Services can complement school activities via field trips or dedicated events, but don't feature any kind of evaluation of its participants. This difference from the main education agent in Western societies (schools) allows for a rare opportunity to question some ideas and discover, test and build modes of action that, for several reasons, aren't allowed to school systems. Thus, the first question that arises is to define a general idea of Education from which one can reflect on its role. There are certainly many definitions of Education but,

maybe one of the greatest goals of Education is to give people ways to relate with things that have to be discovered and built. One doesn't educate for what is obvious or innate, one educates so that we can build our own ways allowing us to discover more and more. So, Education should not be something temporary or someone's privilege: it's endless and should be continuous. In the case of Music Education, this is even more striking, since the Music itself is limitless and undecipherable (Rodrigues & Rodrigues, 2013: 193; Rodrigues, 2009; author's translation).

In the case of Casa da Música (CdM), there was a foundational philosophy defending a very eclectic and embracing idea of Music - CdM intended to be "the house of every music". "Thus, and because Education is not synonymous with school and Music, it is much more than the activity of a musician that others are destined to contemplate", "the Educative Service serves for everyone to build their relationships with Music: superficial or profound, rational or affective, abstract or concrete, in one or various styles, with these or other means" (Rodrigues & Rodrigues, 2013: 193, author's translation). In that sense, activities for babies, children, young people, adults, seniors, people with special needs, people with or without musical experience, teachers and communities, were devised.

Conceptualizing the ES program included the idea that the construction of those relationships with Music could be made in several ways – listening, making, creating, learning about music. The more we hear, make, create and know, the more we "understand" Music, that is, the more we "relate to" Music, the more we "open to" the power, pleasure and fascination that Music has upon us. The ES aimed to provide different forms of relationship with Music so that the same person could "enter" in diverse ways (and build its own "Education"), and so that different people had a place on "the house of all music(s)" (Rodrigues & Rodrigues, 2013: 194).

The philosophy described earlier gave origin to ES's following set of goals:

1. To catalyse and nourish the creation of bonds with music: promote interest for its discovery – listening, making, creating, knowing;

2. To contribute to the acquisition of tools for musical understanding: providing instruments for fruition and free and autonomous creation;
3. To touch a broad spectrum of people, considering their differences and specific needs: individuals, families, schools, communities, babies, children, teenagers, young people, adults, seniors, specialists, amateurs or simply “curious people”;
4. To fill voids of the offers in the field of music and education, namely opening education to “several kinds of music” and other arts and technologies;
5. To explore the role of music as a rehabilitating factor and affection generator: promoting unfavoured communities and special needs people’s inclusion;
6. To contribute to an integrated conception of artistic projects, promoting emergence of truly transversal and unpretentious artistic discourses;
7. To intervene in training and investigation areas that can sustain educative projects within CdM’s philosophy: training people, research processes and methodologies, create tools;
8. To inspire other educative, social and cultural agents: creating ideas and pilot-projects that can be further dynamized and developed by agents specially tailored for school, communities and other kinds of work.

The aforementioned goals were based on the belief that education and music are self-justified, not a means to an end, but an end in themselves. The creation of audiences and the attraction of future “concert goers” was not, thus, an educative goal, though it might be an unwarranted product of a successful educative work.

Lastly, there was an effort in creating alternatives to the frequent dilemma between promoting formal education activities and purely recreational activities. The Educational Service should promote pedagogically significant activities, in balance with other educative agents’ activities, specializing in areas where opportunities are scarce. To conclude, “the ES does not “teach” music, it creates opportunities, poses challenges, shows clues, exposes people to meaningful musical experiences” (Rodrigues, 2009; author’s translation).

The long-term experience of Opus Tutti project

Opus Tutti was a four-year project (2011-2014) rooted in the idea that Music can play an important part in the development of interaction, communication and cooperation between people (Rodrigues et al., 2013). The project was conceived by CMT and LAMCI-CESEM and supported by the Educative Service of the FCG, aiming to promote the creation of methods to improve human development through arts in early childhood.

With these ideas and background in mind, the main concerns were:

1. To conceive and experiment models of intervention in the community within a broad perspective;
2. To promote discussion and reflection;
3. To develop best-practices that could be recommended to educational and community agents, training artists and educators;

4. To create innovative artistic experiences and to develop artistic discourses based on the principle of sharing artistic languages and creative processes;
5. To provide real opportunities for the engagement of the community and action on a specific context.

Each year corresponded to a phase of the project:⁵ Budding, Rooting, Growing and Fruiting, inspired by the idea that the project would be, itself, a developmental process of organic nature and have the capacity to react and adapt to circumstances, results and people.

The project was not a purely early childhood project – it extended itself intergenerationally and holistically, involving academic, educational, artistic and social aspects and approaches. The systemic approach has been a very influential perspective for us, and this is probably one of the reasons that explain why a project concerning early infancy has been including initiatives addressed to adults and older children. In fact, having that theoretical model in mind, we look at infants as elements belonging to different systems – the nuclear family, the extended family, and the nursery care institution – that also belong to collateral systems in the community. Accordingly, we planned initiatives that are directly addressed to infants and we also extended our action to other components of the system that can indirectly benefit them. (Rodrigues et al., 2013)

Throughout the project, a broad spectrum of initiatives was designed to involve families, children and the community, facilitating social discoveries through innovative ways to make music and arts together. A strong repercussion on reframing connections between artistic and educational approaches gave birth to new ideas intertwining both dimensions.

Considerations on the “constellation” concept

The concept of “constellation” outside the astronomical framework is used in an array of subjects, including Technology, Medicine, Linguistics⁶, Psychology⁷, and Philosophy, namely with Benjamin (Gilloch, 2002) and Henrich (1991). In addition, studies of visualization and representation techniques and their benefits also feature the concept, although mainly focusing on concept maps⁸.

Walter Benjamin states that “ideas are to objects as constellations are to stars” (2003: 34) and Gilloch (2002: 83-84) explains that this notion “of the idea as a constellation is used by Benjamin not only to articulate the importance of the patterning of phenomena by concepts, but also to point out the characteristics of this process. In a constellation of stars, the most remote objects are conjoined to form a unique, legible figure, which cannot easily be undone. [...] The constellation involves a fleeting but irrevocable shift in the perception of phenomena which preserves both their individual integrity and their mutuality.”⁹

These aspects analysed by Gilloch and presented by Benjamin have some relevance to our concept and allow us to establish some parallels. Firstly, the aggregation of objects into a

⁵ Four documentaries were produced, and are available at: <https://vimeo.com/showcase/5430797> (accessed on May 8, 2020)

⁶ See, for instance: Cantos-Gomez & Sánchez (2001).

⁷ As an example: Stern (2019).

⁸ On the importance of visualization techniques applied to Social Sciences Research and the Arts, see: (Hay, Kinchin, 2006; Poldma, Stewart, 2004; Zele Et Al., 2004). For examples related to Arts and Education applications, see: (Garvis, 2011; Stephens, Hermus, 2007).

⁹ See also: Pensky (1993), quoted by Gilloch (2002).

constellation changes our perception of them, by highlighting common features. Secondly, objects (in our case, projects/outputs) preserve their integrity, even if grouped into new constellations, which add meaning to our understanding. Gilloch goes further into an explanation of “origin”:

For Benjamin, ‘origin’ refers to the moment when the constellation of phenomena comes into being, when it is suddenly recognized as a constellation, when the idea is perceived by the critic. This is fundamental. Individual works which compose the idea are always in flux, always becoming something other than what they were, through the corrosive, ruinous action of criticism. Although individual works of art come into existence at a particular moment their meaning is not thereby fixed by the author, but instead is continuously reconstituted in their afterlife (2002: 85).

Though these remarks follow Benjamin’s philosophical context, an interesting point is made – much like an astronomy constellation, its elements evolve continually and independently, while the whole, by having been created (our arrangement of the constellation), remains unchanged.

The approach presented by Mulsow (2009) is closer to our artistic and educational endeavours, concluding the usefulness of philosophical constellations in other areas (“an important contribution to ‘the new history of ideas’ ”), even though his focus lies on German idealism. With a basis on Henrich, among other thinkers, philosophical constellations are defined as a dense ensemble of people, ideas, theories, problems or documents in interaction with each other, and should be considered, primarily, as complex objects that cover people and their motivations as well as their ideas, issues, theories and relevant documents (Mulsow, 2009: 82-83).

Over the years, the manner in which we conceive our work at CMT has been transformed. Deeply rooted in the artistic experience, we came to realize that our creative work has strong educational implications. More and more we value its social relevance and its impact on health and wellbeing. Hence, we came to conceive and nurture it in a manner that allows emphasis on the creation, exploration and development of fruitful relationships between different aspects of reality.

The search for a model that represents what we do emerges from the need to reflect on our experiences and to rethink past work, as well as to base further developments. Several promoters have challenged us to deepen and to articulate artistic and educational strands. In fact, for most of our artistic creations, we developed an intrinsic educative potential that can be explored by the various agents involved in both formal and non-formal education.

In addition to this concern, we seek to deepen that potential and guide the exploration process through participative formats (workshops, training sessions), allowing to deconstruct and understand ideas, languages and subjects that integrate these creations. The various formats differ according to their target audience and include the acculturation of the piece through experimentation, knowing details on aspects of its conception or its relationship with the “state of the art”. This is both a way to multiply its reach and repercussion and a strategy to make the effort and presentation of a creation more profitable.

By proposing the idea of “artistic-educative constellations”, we intend to:

1. emphasize the intrinsic relationship between pure fruition and art learning and pass the message that this philosophy allows for expansion, complexification and continuous discovery;

2. create a conceptual map that allows the organization and communication of the several projects we have achieved, emphasizing relationships between several proposals, aesthetic and thematic coherence, promoting the idea that the contents we present and work with in a definitive way on a show are subjects for the exercise of creativity with others;
3. create a model in which it is possible that inside each constellation there is no need for the simultaneous presentation of its elements (show, workshop, conference, training session), because they have consistency and coherence in themselves and can be presented independently or articulated, creating relationships that provide greater fruition and learning, which might have multiplier effects;
4. create a coherent direction of work without restraining the diversity that characterizes us or the exaggerated specialization of a determined type of language or audience.

The CMT-Universe and its artistic-educative constellations

The coined term ‘artistic–educative constellations’ defines a working model and metaphor for our vision. It provides us both with a poetic sense of a universe yet to be discovered, and an objective, strong, analytical framework in which different ‘bodies’ interact through conceptual and aesthetic ‘forces’ or ‘fields’.

This idea of “constellation” emerged in an intuitive way from a group of examples and practical experiences we had, giving rise to an aggregating concept. That helped generating further experiences and new artistic formats. Figure 1 charts CMT’s work over the last twenty years, as a Universe of “artistic-educative constellations”, with the intention of transmitting the idea of a conceptual mapping in which different initiatives are represented by different shapes and organized by aesthetic, thematic and methodological proximity.

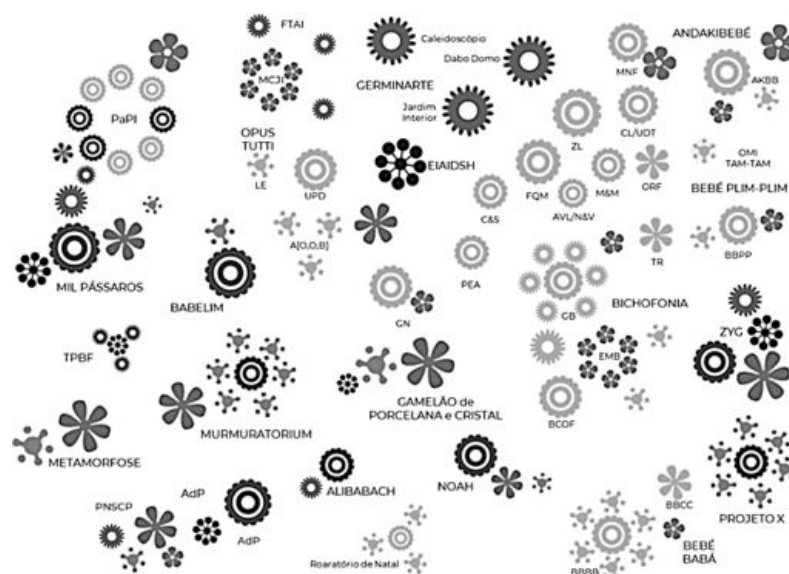


Figure 1. CMT Universe. Design by Mafalda Maia. With permission from Guia do Universo-CMT.

Shapes are assigned to each type of work, according to Table 1. In colour version available on *Guia do Universo-CMT*¹⁰ (2020), each shape has a corresponding colour, for better visualization. These had to be grey scaled here for publication purposes.¹¹







Shape	Format
	show/performance
	Edition
	Installation
	Training
	Workshop
	Conference

Table 1. Correspondence between shapes of elements in Figure 1 and their format.

Opus Tutti was essential to the consolidation of this concept. After *Opus Tutti*, we applied the concept to other existing projects and extended the idea to new pieces and publications. Considering this process, we will analyse the *Opus Tutti* ‘parent’ constellation, the integrant GaPC constellation (part of *Opus Tutti*), and the *Anatomia do Piano* (AdP) constellation, to which the concept was later applied.

Opus Tutti

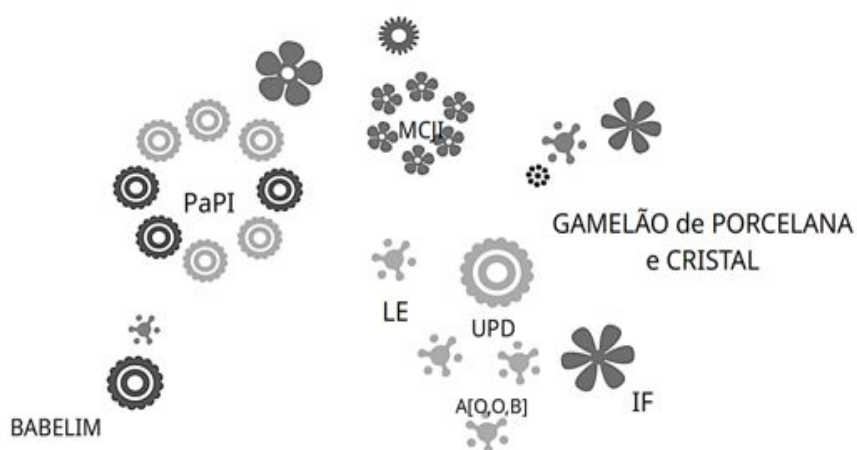


Figure 2. *Opus Tutti* constellation, its main activities represented. With permission from *Guia do Universo-CMT*.

The *Opus Tutti* constellation is the most complex one on the CMT’s universe. It is a project that has originated many diverse experiences as:

¹⁰ Available in the Sharing Corner of CMT’s website: <http://www.musicateatral.com/publicfiles/Sharing/> (accessed on May 8, 2020).

¹¹ Dark grey corresponds to productions on tour in 2020, light grey corresponds to productions not on tour in 2020.

- participatory shows (*Um Plácido Domingo, Babelim*);
- workshops for parents and children (*Afinação do Ouvir, Afinação do Olhar, Afinação do Brincar*);
- workshops with educators and artists (*Ludofónica Experimental*);
- installations (*GaPC* and *Inventário dos Frutos – IF*);
- reflection meetings (*Encontro Internacional Arte Para a Infância e Desenvolvimento Humano – EIADSH*);¹²
- video documentaries and publications, which include a book (*Ecos de Opus Tutti*), a set of pedagogical materials (5 booklets and 5 CDs) presenting a broad pedagogical approach on music for infancy and childhood (*Manual para a Construção de Jardins Interiores*);
- regular sessions on a pilot-kindergarten (*Creche&Apareche*);
- a set of small musical-theatre pieces designed to tour nurseries and kindergartens, in articulation with theatre and another cultural agents' programming (*Peça a Peça Itinerante – PaPI*).

While these initiatives have been created within *Opus Tutti*, and the project itself lasted for four years, its repercussions are still visible, and corroborate our view on the importance and broad spectrum of an artistic project's impacts. Some of the initiatives have acquired their "own life" and generated their own path, as is the case of *Babelim*,¹³ PaPI and GaPC, which became constellations themselves.

Porcelain and Crystal Gamelan (GaPC)

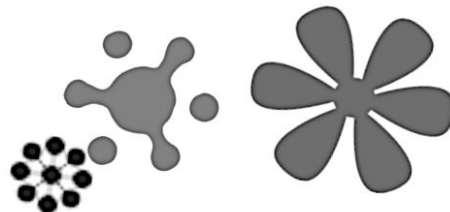


Figure 3. The GaPC constellation (featuring the installation, workshop and conference). With permission from Guia do Universo-CMT.

A reflection about the GaPC constellation and its birth within a parent constellation (*Opus Tutti*) is helpful to understand how an element (GaPC) continues to evolve despite the main project's (*Opus Tutti*) conclusion. This is particularly interesting because of the analogy with Astronomy - some stars die, new stars are born, and our perspective and constellation may shift.

¹² International Colloquium Arts for Childhood and Social and Human Development. Author's translation.

¹³ A performing piece for babies, featuring a group of older children (CMT-kids) that interact and sing for the little ones (as far as we know an innovative format on the artistic production for the early years), involving the audience on music making through the use of visual signs and providing friendly sound tools and musical instruments that are played during the performance and that kids can explore at the end. (Still touring, having been presented extensively in Portugal and travelled to France, Denmark and Finland).

GaPC is a collective instrument and visual installation that was created for the performance entitled *Um Plácido Domingo*, which occurred in 2011 under the scope of *Opus Tutti* project. This creation was devised to establish a dialogue between artists, performers, parents, babies, and the Calouste Gulbenkian Foundation Gardens. GaPC proved to be a “friendly musical instrument”, accessible to anyone, and a good example of sustainability for a project, having since then travelled extensively throughout the country.¹⁴

The Porcelain and Crystal Gamelan is an idea inspired by the ancient Javanese gamelan that also draws on various trends in experimental music, from Cage to Partch. Both a visual object and sculpture, it can take many forms and dimensions and is rethought in accordance with the architectural space which hosts it. The combination of hundreds of pieces of porcelain, earthenware, stoneware, glass and crystal, with various shapes and sizes, results in a myriad of tones ranging from complex sets of frequencies and harmonics to marked base frequencies, sounding like bells, electronical instruments or conventional instruments. The Porcelain and Crystal Gamelan is a unique instrument due to the relationship between these sounds and the notions of structure and space¹⁵ (Rodrigues et al., 2020).



Figure 5. The Porcelain and Crystal Gamelan at the Calouste Gulbenkian Foundation Gardens. From left to right, the “little gamelan”, for toddlers, a set of portable pieces on the floor that transform the audience into participants, the porcelain pieces at the back and the crystal pieces at the far right. With permission from CMT’s website.

Musical works using this piece employ exploratory strategies and create mechanisms for structuring musical ideas that are notation independent, based on the idea of collaboration and interpersonal communication. This allows people without musical training to be able to express themselves musically and those with more advanced training find that this instrument presents unique challenges. It has also been the central element of multidisciplinary performances, sharing space with other arts and musical or electronic instruments. [...] The Porcelain and Crystal Gamelan is an artistic research project, jointly produced by CMT, the University of Aveiro and Vista Alegre Atlantis, that seeks to stimulate new performance practices and explore an interdisciplinary area that allows ideas to be generated and tested in musical composition, sculpture, creation of new instruments and

¹⁴ Big Bang Festival at CCB (Lisboa), Museu de Santa Joana (Aveiro), Parque da Devesa (V. N. Famalicão), Casa da Música (Porto), among others.

¹⁵ Adapted from <http://www.musicateatral.com/gamelao/en> (accessed on 11 May 2020; and Rodrigues et al. (2020)).

*pedagogy, as well as interpersonal communication, materials, acoustics and design.*¹⁶

The more recent journey of this collective instrument is the project GamelIN, aimed at the inclusion/empowerment of people with mental disabilities.

At the GamelIn¹⁷ project, there was an additional layer of information. For this project, CMT collaborated with Associação de Viseu de Portadores de Trissomia 21 (AVISPT21),¹⁸ in order to promote an experience allowing people with disabilities to fully participate in a musical journey that would also involve non-disabled people, namely students from different education levels: secondary school, undergraduate studies and postgraduate studies.¹⁹

The final performance *Porcelana, Cristal e Pássaros* (Porcelain, Crystal and Birds) was the epilogue of the “musical journey” that took place throughout two months and allowed this “fragile orchestra” to present publicly the result of their joint creative work. Thereafter, a documentary and an audio-visual poem (dedicated to Rolf Gelhaar, a beloved artist who greatly inspired our work) were produced.²⁰

1.1. Anatomia do Piano (AdP)

Anatomia do Piano is the show that gave name to the AdP constellation. This constellation is based on the piano and in the different ways of listening, creating and experimenting with the instrument. This constellation is a good example of the different relationships we have with music within our projects:

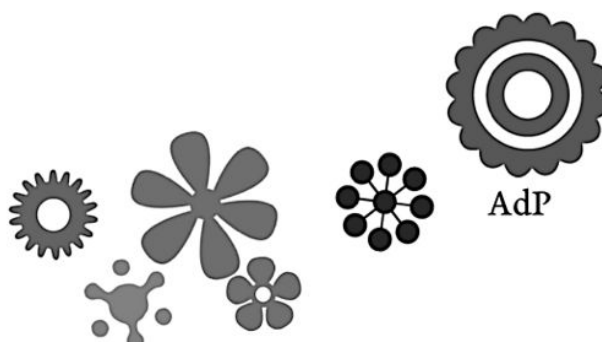


Figure 5. AdP constellation (AdP show, Pianoscópio installation, workshop, CD, training and conference). With permission from Guia do Universo-CMT.

Anatomia do Piano was created in 2011, aiming “to deconstruct the instrument that may be considered the most influential in the history of Western music”.²¹ Conventional, extended and prepared piano techniques are explored in a dialogue between two performers who communicate through theatre, dance, and music:

[t]he piano is also regarded as the main piece of scenery and the entire performance explores the idea of revealing the inside of the instrument. A

¹⁶ <http://www.musicateatral.com/gamelao/en/> (accessed on March 16, 2019).

¹⁷ Set through October till December of 2018 at Igreja S. Miguel do Fetal, in Viseu.

¹⁸ Viseu Association of Down’s Syndrome Carriers.

¹⁹ Arts Course at Escola Secundária Viriato de Viseu, Escola Superior de Educação de Viseu and Masters in Music Education at UA, respectively.

²⁰ Available online at: <https://vimeo.com/313127916> and <https://vimeo.com/376525722>, respectively. These publications are a product of the continued expansion of the constellation but haven’t been added to the map yet.

²¹ <http://www.musicateatral.com/anatomiadopiano/en> (accessed on March 16, 2019).

series of articulated wooden pieces containing objects that can be used throughout the performance are attached to the piano, creating the idea of a “metaphorical surgery”. (...) As the performance unfolds, the piano is revealed as “a place, a being with life, a sculpture, a stage, a house where music lives”. Anatomia do Piano invites the audience to “enter” the piano and uncover normally hidden details, building imaginary worlds where the boundaries of the various arts become blurred. It proposes a journey in a poetic territory that is usually absent in performances for children and makes the Piano the great protagonist of a “total work” of art (Rodrigues et al., 2019).



Figure 6. Aspects of the AdP show and a Pianoscópio workshop. With permission from CMT's website.

As for the Pianoscópio workshops, the experimental process becomes the norm, where each workshop is different from the previous ones, and each setting/residency brings a new shape to the installation. Pianoscópio works as a lab, where the leader guides the group (schools, families, communities, educators, and so forth) through a set of experiences, being constantly aware of the group's energy and discoveries, which can lead into completely new experiences for everyone involved.

Conclusion

The educative question is central to CMT's philosophy and although *Opus Tutti* is a very structuring activity in that philosophy, the educative potential of CMT's creations (pieces and publications) is immense and to think of an integrated approach of art/education is a way to deepen the project CMT, to potentiate the developing ideas and multiply the effects of CMT's artistic and educative intervention.

The idea of “artistic-educative constellations” intends not only to systematize internally the way in which we conceive our projects, but also to communicate to cultural and educative agents the possibility and immense interest in articulating in an effective, economical and simple way, artistic and educative aspects on their cultural agendas. Although there are in Portugal cases of good practices in articulating artistic and educative agendas, our opinion is that there is still a long way to go and that depends not only on programmers' sensibility, but also on the existence of opportunities created by artistic fabric that allows approaching educative aspects with the same quality and depth as artistic creation. CMT's artistic team faces educative activities as natural territory and reviews itself in that mission with the same conviction as the artistic challenge.

CMT's activity is, in many ways, innovative, specifically in what concerns the idea, and specially practice, that art and education are not independent territories but aspects of the same reality. 'Art for Human and Social Development' has emerged as a concept that guides some of our most important projects, while we search for ways to understand CMT's evolution over the years. In a way, we put ourselves in an observational position relative to our work, allowing a critical perspective and showing possible development paths. It is in that reflexive perspective over our work, but also the perspective of being capable to communicate the essence of what we do (an often-complex exercise, given the singularities we deal with) that we propose the concept of "development of artistic-educative constellations". In this way, we hope to contribute for a clearer view of our work, open to dialogue with other agents inspiring future developments in all people or institutions that search for ways to better worlds through art.

CMT's exploratory practices with different audiences/participants, with the goal of human and social interconnectedness and development, have therefore a remarkable difference with traditional constellation maps and navigation charts: an element is not just discovered at a distance while looking into a telescope or other kind of machinery, it is slowly constructed, experimented upon, shared, while it suffers its own transformation, allowing for a clearer image of what it can be represented as time and accumulated experiences. In this setting, people have a preponderant role in the shaping and conditional outcome of the object, thus creating a complex map full of elements roaming in different directions through time.

Visual representation has a number of advantages into achieving a holistic view of artistic experience and educative outputs, and the "constellations" model in particular adds the possibility of reorganizing contents in relation to time, theme/object of study, people involved, collaborating entities, among others, helping the analysis of influences and tendencies within our frameworks.

The "artistic-educative constellations" model can act as an interactive way of discovering, exploring and presenting CMT's work, intending to promote and instigate people's participation and creativity, but also as a way to reflect upon our universe and rethink it visually, transform it, creating new ideas and relationships between elements.

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Composition Models for Augmented Instruments: HASGS as Case Study

Henrique Portovedo¹, Paulo Ferreira Lopes¹ and Ricardo Mendes²

Abstract. This paper presents the concept of hasgs regarding the augmentation procedures applied to an acoustic instrument, at the same time as demonstrates how composers applied technology prototyped to the composition of works. The development of hasgs has been driven by the compositional aspects of the original music created for this specific electronic augmented instrumental system. Instruments are characterized not only by their sound and acoustical properties, but also by their performative interface and evolutionary repertoire. This last aspect has the potential to establish a practice among performers at the same time as creating the ideal of community contributing to the past, present and future of that instrument. Augmenting an acoustic instrument places some limitations on the designer's palette of feasible gestures because of those intrinsic performance gestures, and the existing mechanical interface, which have been developed over years, sometimes, centuries of acoustic practice. We conclude that acoustic instruments and digital technology are able to influence and interact mutually, creating augmented musical performance environments based on the aesthetics of the repertoire being developed. This work is, as well, a resource of compositional methods to composers and programmers.

Keywords. Augmented instruments, saxophone, gestural interaction, live electronics

Introduction³

Augmenting an acoustic instrument places some limitations on the designer's palette of feasible gestures because of those intrinsic performance gestures, and the existing mechanical interface, which have been developed over years, sometimes, centuries of acoustic practice (Thibodeau & Wanderley, 2013: 1). A fundamental question when augmenting an instrument is whether it should be playable in the existing way: to what degree, if any, will augmentation modify traditional techniques? The goal here, according to our definition of "augmented", is to expand the gestural palette, at the same time as providing the performer with extra control of electronic parameters. From previous studies conducted by this research team we can say that the use of nonstandard performance gestures can also be exploited for augmentation and is, thus, a form of technique overloading.

It seems straightforward to define musical gesture as an action pattern that produces music, is encoded in music, or is made in response to music. The notion of gesture goes beyond this purely physical aspect in that it involves an action as a movement unit, or a chunk, which may be planned, goal directed, and perceived as a holistic entity (Burtner, 2002: 4) In our

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perspective, augmented instruments and systems should preserve, as much as possible, the technique that experienced musicians gain along several years of studying the acoustic instrument. The problem with augmented instruments is that they require, most of times, a new learning process of playing the instrument, some of them with a complex learning curve. Our system is prototyped in a perspective of retaining the quality of the performance practice gained over years of studying and practicing the acoustic instrument. Considering, for instance, the electric guitar one of the most successful examples of instruments augmentations and, at the same time, one of the first instruments to be augmented, we consider that the preservation of the playing interface was a key factor of success, allied to the necessity of exploring new sonic possibilities for new genres of music aesthetics. The same principles are applied to synthesizers as the Moog or the Buchla's Keyboards from the 1970s that still influence new instruments, both physical instruments and digital applications. With HASGS (Hybrid Augmented System of Gestural Symbiosis) is our intention to integrate the control of electronic parameters organically providing a degree of augmented playability within the acoustic instrument.

Prototyping

HASGS was initially developed having in mind to solve performative issues regarding pieces using external controllers as footswitches or pedals, as well as other external software controllers. It was the repertoire in our performative experience of recent mixed music that has influenced the way in which this system has been developed. In this scenario, we mention the concept of Reduced Augmentation because, from the idea of having all the features of an EWI (Electronic Wind Instrument) on an acoustic instrument, which could lead to performance technique overload or, as well, making the acoustic instrument too much personal in terms of electronical hardware displacement. The proliferation regarding to the creation of augmented instruments in the NIME context is very big, but just a little number of them acquire recognition from the music market and players. As any musical instrument is a product of a technology of its time, augmented instruments are lacking the validation from composers and performers apart from their inventors. Due mostly to the novelty of the technology, experimental hyper-instruments are mainly built by artists with a composer/performer background (Burtner, 2002: 1). These artists mostly use their own instruments for their performances without much validation from the needs of other performers or the community in general. There is no standardized hyperinstrument yet for which a composer could write. It is difficult to draw the line between the composer and the performer while using such systems. The majority of performers using such instruments is concerned with improvisation, as a way of making musical expression as free as possible (Palacio-Quintin, 2008: 1). Augmented performance can be considered enactive knowledge. This term, Enactive Knowledge, refers to the knowledge that can only be acquired and manifested through action. Some examples of human activities that heavily rely on this knowledge are: dance, painting, sports, and performing music.

The first prototype of HASGS, we developed, was attached to a saxophone, one Arduino Nano board, processing and mapping the information from one ribbon sensor, one keypad, one trigger button and two pressure sensors. One of the pressure sensors was located on the saxophone mouthpiece, in order to sense the teeth pressure when blowing. Most of the sensors, more precisely the ribbon, the trigger and the pressure, were distributed between the two thumb fingers. This placement proved to be very efficient once the saxophonist did not use very much such fingers to play the acoustic saxophone. This allowed, as well, very precise control of the parameters assigned to the sensors. The communication between the

Arduino and the computer was programmed through Serial Port using USB protocol. This communication sent all MIDI commands. The computer was running a Node.js program that simulated a MIDI port, and every time it received data from the USB port, it sent that data to the virtual MIDI port.

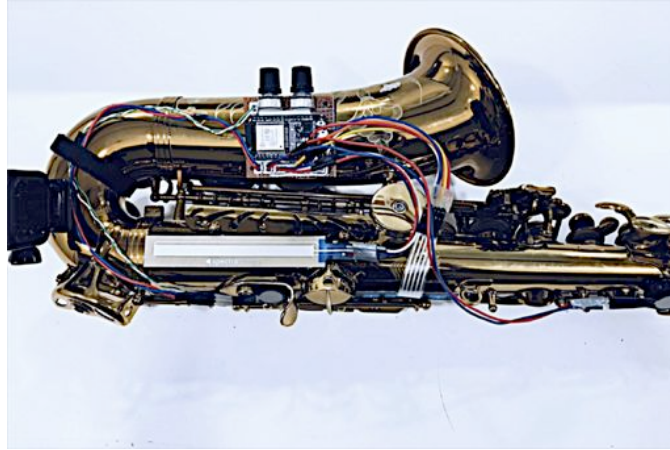


Figure 1. HASGS Version 3

Taking into consideration this communication protocol, the system has an evolutionary perspective, version 3 started with the substitution of the Arduino Nano by an ESP8266 board. The communication between the sensors and the received data into the computer became wireless due to this fact. Both the computer and HASGS connect to a Personal Hotspot created by a mobile phone API. This specification will allow much performance freedom to the performer itself, allowing extra pace for the integration of an accelerometer/gyroscope. In this new version, two different knobs were added to the system, permitting independent volume control, mainly useful for gain and volume control.

At this stage of the research, and after several performance opportunities and prototypes, we decided to include more capabilities, as seen in the following figures. So, we started by using an ESP32 board, providing Bluetooth Low Energy and Wifi connectivity, in addition to the main microcontroller of the system. . This last version includes: up/down selectors, 2.5 axis joystick, piezo sensor, connection selector, accelerometer/gyroscope, extra trigger switches and several status led indicators for multiple purposes.

HASGS – BLOCK DIAGRAM

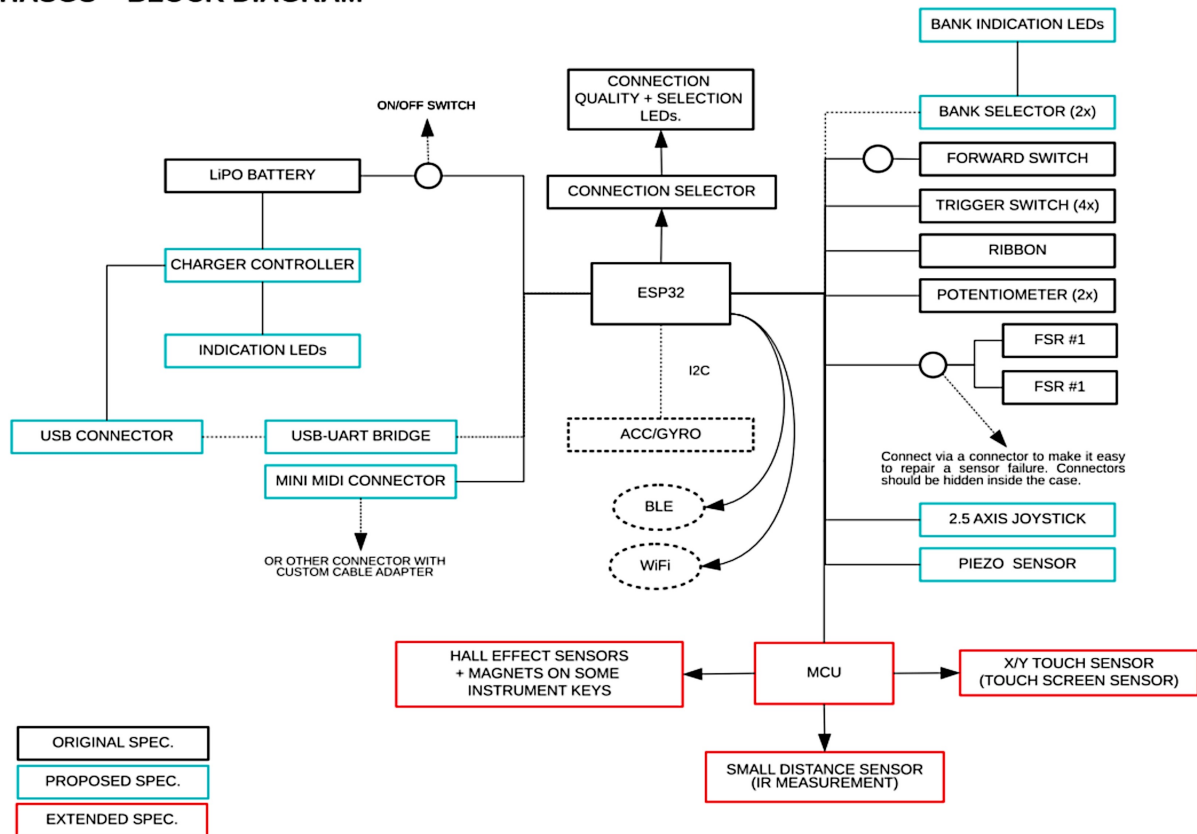


Figure 2. HASGS Block Diagram

The manipulation of HASGS is directly associated with gestural controls. Movements used to control sound in many multimedia settings differ from those used for acoustic instruments. For digital electronic instruments the link between gesture and sound is defined by the electronic design and the programming. This opens up many possible choices for the relationship between gesture and sound, usually referred to as mapping. The mapping from gesture to sound can be fairly straightforward so that, for example, a fast movement has a direct correspondence in the attack time or loudness of the sound. However, with electronically generated sounds it is also possible to make incongruent, “unrealistic” links between gesture and sound. The gestural control of electronic instruments encompasses a wide range of approaches and types of works, e.g. modifying acoustic instruments for mixed acoustic/electronics music, public interactive installations, and performances where a dancer interacts with a sound environment. For these types of performances and interactions, the boundaries between, for instance, control and communicative gestures tend to get blurred. To give enough freedom to the performers, the design of the interaction between sound and gesture is generally not as deterministic as in performances of acoustic music.

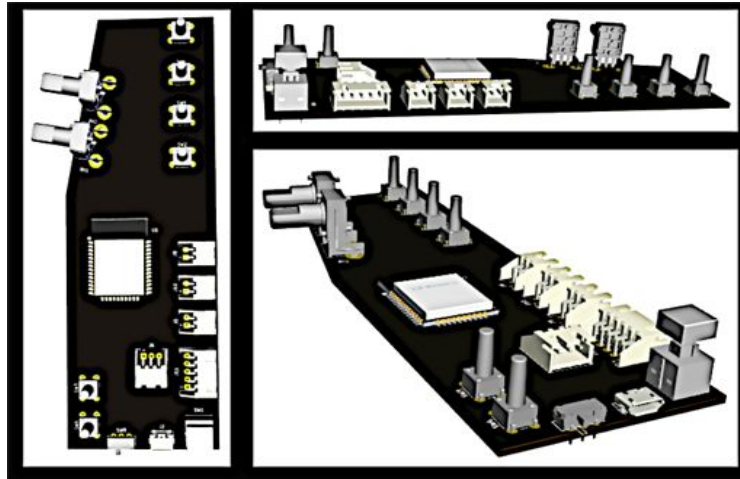


Figure 3. HASGS Board Final Version

Software

Mapping

In the process of developing repertoire to create an erudite community around HASGS, a table of instructions was sent to composers, regarding the communication between the sensors and the computer/software. We suggested a normalization on the software used, giving preference to Max/MSP. A Max/MSP Abstraction was produced with the purpose of providing mapping instructions and options to composers. It was our intention to provide a rewarding experience when programming/composing for this augmented instrument, even to less experienced composers in the domain of programming live electronics. This Abstraction refers to the third version of the prototype, since the pieces here analyzed were written for HASGS version 3.

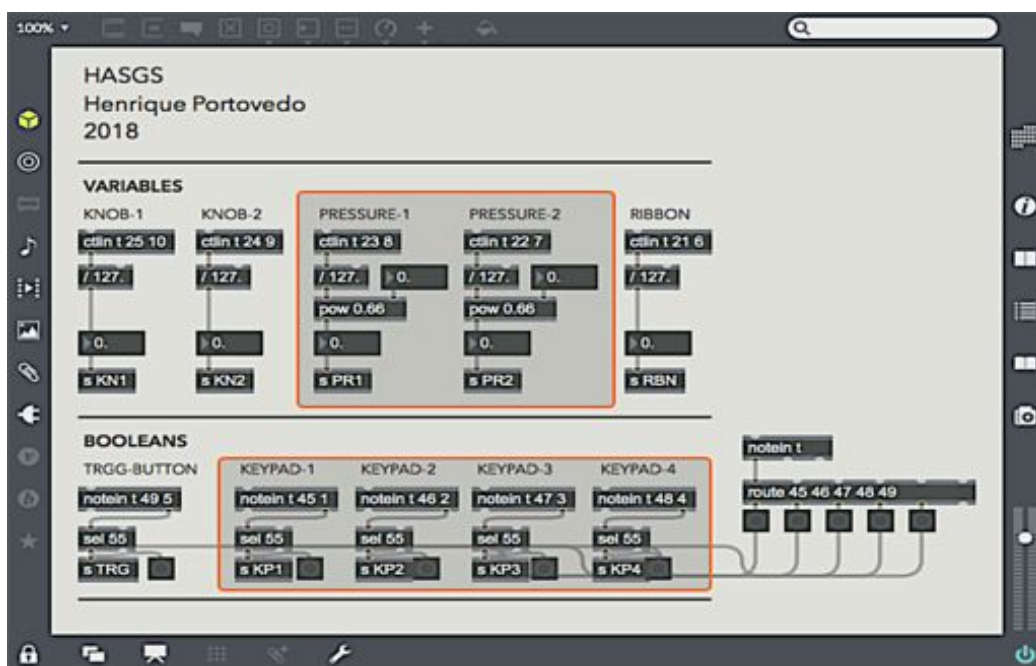


Figure 4. HASGS Mapping Abstraction

In the scope of this work, and to detail the information, we refer to the different sensors as:

Knob 1 (Potentiometer): KN1

Knob 2 (Potentiometer): KN2

Pressure Sensor 1 (Left Thumb Finger): PR1

Pressure Sensor 2 (Right Thumb Finger): PR2

Ribbon Sensor: RBN

Keypad 1: kp1

Keypad 2: kp2

Keypad 3: kp3

Keypad 4: kp4

Trigger Button: TRG

GUI

Each piece has been developed with different Graphical User Interfaces (GUI). Initially, we had the intention to have the same GUI for all the pieces. That could be interesting for other performers when approaching HASGS and its “language”. However, we understood that each piece required a different visual feedback system or visual interface, once they possess completely different concepts on how using the augmentation system. This proved that diversity is probably the richest argument of HASGS in regard to its use in different composition models. These various pieces result in different ways on how to use the saxophone’s sound materials, and for this reason, it is not surprising that the visual interface of each piece has different configurations and characteristics. The evolution and development of notation systems and visual programming concepts have largely contributed for the proliferation of extended techniques and instrumental virtuosity. Yet when acoustic instruments are played or combined in unconventional ways, the result can sometimes sound like electronic music (Roads, 2015). One thing to consider regarding the new repertoire for augmented instruments, and more precisely, to this augmented saxophone system, is the presence of multiple layers of information, something that is still not common when writing for a monophonic instrument.

The goal of user interface design is to make user’s interaction as simple and efficient as possible, in order to meet user goals. A good user interface design looks to facilitate the completion of a task, without drawing attention to itself, being intuitive. Graphic design and typography are applied to support its usability, influencing how the user performs certain interactions and improving the aesthetic appeal of the design; design aesthetics may enhance or detract the use of the interface’s functions (Norman, 2002). According to the ISO 9241 standard recommended for organizing the information (arrangement, alignment, grouping, labels, location), display graphical objects, and coding the information (abbreviation, color, size, shape, visual cues), are distinguished in seven attributes: Clarity, the information content is conveyed quickly and accurately; Discriminability, the displayed information can be distinguished accurately; Conciseness, users are not overloaded with extraneous information; Consistency: a unique design, conformity with user's expectation; Detectability: the user's attention is directed towards information required; Legibility, information is easy to read; Comprehensibility, the meaning is clearly understandable, unambiguous, interpretable, and

recognizable. Artists and scientists have a perpetual interest in the relationship between music and art. As technology has progressed, so too have the tools that allow the practical exploration of this relationship. Today, artists in many disparate fields occupy themselves with producing animated visual art that is correlated with music (Bergstrom & Lotto, 2009).

Repertoire

Cicadas Memories

Cicadas Memories is much more an improvisational process than a piece of written music. The piece was composed for an augmented instrument being important regarding the type of values that were produced by these sensors: modulating variables vs boolean values, continuous stream of data vs fixed values, relative freedom of the player's body and gestures vs necessity to interact with the sensors from the hands and fingers, and so forth. This means that the player's gestural activity on the sensors conditions its way of performing the instrument, thought as a conventional tenor saxophone: the sensors playability modifies the saxophone playability on how accessing the key, considering the conventional way of playing it. It became an evidence that the 4 pads could be thought as a « 4 bits data flow generator ». Since 4 bits means different 16 values (ranging from 0 to 15), it became clear that those 16 values were like historically related to the traditional sixteenth note of the 4/4 bar in Western music. The method eventually introduces a non-standard musical way of thinking: the present of the live performed music is (at least partially) controlled, altered by the actualization of the past. In the case of *Cicadas Memories*, this means that the actual gesture of the player will alter (one minute later) the electronic sound-field used as the sonic background for the saxophone's rhythmic patterns (also created by the keypad's « 4 bits » layers of memory). Therefore, the performer has to develop two simultaneous ways of thinking (and acting) while performing: a part of his mind for the present (the patterns imposed by the software but created by the player's past action on the keypads), another one for the future (its gestural connection to the sensors). He has to deal with two temporalities usually separated in the act of live music performance: he writes the future score and improvises on his past gestures, in the present time.

Controls per synth

The control values of all sensors were normalized from 0 to 1 data value. The abbreviation nm stands for normalized.

[p+delay] synth

- (pr1nm/kn2nm): delay time
- (pr2nm/rbn2nm): delay feedback
- (kn1nm/kn2nm): delay resonance
- (pr2nm/kn1nm): overdrive 1 gain
- (pr1nm/kn2nm): overdrive 2 gain
- (pr1nm/kn2nm): synth output gain

[p all-sqnz] synth

kn1nm: synth output gain

kn1nm: right channel delay in samples (stereo width)

NV1: connected to KP1 inside the [p distrib] sub-patch, increments the tab note-value to adjust the allpass filters time (note values converted to ms) each time the *binary* combination of the Keypad 1 is equal to 0 or 8

NV2: Keypad 2 binary combination equal to 1 or 4

NV3: Keypad 3 binary combination equal to 2

NV4: Keypad 3 binary combination equal to 4

S1 to S16: activates each step of the sequencer via the Keypads (4 steps / sixteenth notes for each PAD in connection with the display in the main patch) TRG resets all sequencer's steps to 0

[r seq step]: adjusts the number of steps (sixteenth notes, from 1 to 16) of the sequencer in association with the *binary* combinations (inside the [p distrib] sub-patch). This function might appear complex and requires some time when only Keypads are used:

KP1 has a value equal to 8

KP2 has a value equal to 4

KP3 has a value equal to 2

KP4 has a value equal to 1

The different *binary* combinations of the Keypads values can produce every possible loop length from 1/16 to 16/16. Of course, only the steps (orange squares are active steps) included in the loop length will be played.

[p glitch-synth] synth:

cnt1 to cnt16 (in relationship with the *binary* combinations of the Keypads): controls some synced frequencies defining the gain of the incoming signals in the filters, as well as the two samples length, start and end points, speed / pitch in regard to tempo, so in sync with [p all-synth] and [p rain-osc] patches.

KP1: sets the center frequency of the resonant filters in a random way

pr1nm: sets the output gain for each sampler

kn1nm: adds some kind of saturation to the signal (left sampler) kn2nm: adds some kind of saturation to the signal (right sampler)

[p rain-osc] synth:

(pr1nm/pr2nm): synth output gain

kn1nm: range of the random starting frequency (left) of the *glissando*

kn2nm: range of the random starting frequency (right) of the *glissando*

pr1nm: added value to the starting frequency (left) of the *glissando*
pr2nm: added value to the starting frequency (right) of the *glissando*
rbn1nm: added value to define the ending frequency of both *glissandi* (left and right have different values even if they share the same controller)
kn1nm: attack filtering / smoothing (left)
kn2nm: attack filtering / smoothing (right)
(pr1nm/pr2nm): allpass filters gain

Comprovisador

Comprovisação n° 9 is a musical performance made by a soloist, who used an augmented saxophone (HASGS), an ensemble of musicians that sight-read an animated staff-based score and a real-time composition and notation system (Comprovisador) operated by both soloist and performance director/mediator. The performance aimed to create a context where both composed and improvised elements coexisted in an aesthetically relevant interdependency, taking advantage of the possible synergies between a real-time composition, a notation system, and a hybrid acoustic-control augmented instrument to enhance the level of interactivity. The interaction flow is completed by the soloist's reaction to the composed response and further ramified by the presence of a performance mediator, establishing a complex dialectical relationship.

Comprovisador is a system designed by Pedro Louzeiro to enable mediated soloist-ensemble interaction using machine listening, algorithmic compositional procedures and dynamic notation, in a networked environment. As a soloist improvises, Comprovisador's algorithms produce a staff-based score in real-time that is immediately sight-read by an ensemble of musicians, creating a coordinated response to the improvisation. Interaction is mediated by a performance director through parameter manipulation. This system requires a network of computers to display the notation (separate parts) for each musician who plays in the ensemble. Further, wireless connectivity enables computers – and therefore musicians – to be far apart from each other, enabling space as a compositional element. A host computer centralizes algorithmic tasks accepting pitch input from the soloist and parametric input from the mediator – and, in this special case, from the soloist as well.

In the present *Comprovisação*, HASGS was used as a musical interface with dual purpose:

1. to feed Comprovisador's algorithms with improvised musical material (via acoustic instrument)
2. to control several of its parameters (via controllers and sensors) thus, claiming some of the performance director's mediation tasks for the benefit of interaction flow

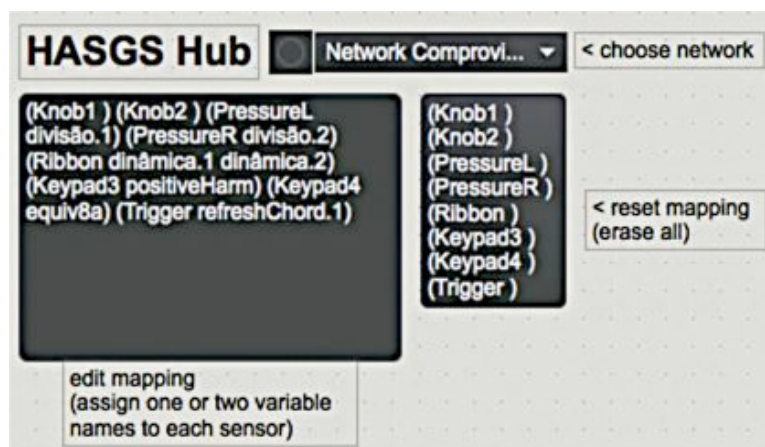


Figure 5. HASGS Hub in Comprovisador

A thoughtfully outlined performance plan is attained through presetting of algorithmic parameters and corresponding control mapping. Each preset yield different types of musical response, ranging from reactive synchronized *tutti* impacts to intricate micropolyphonic textures. HASGS keypad allows the soloist to navigate through Comprovisador's presets according to the plan and subject to his momentary desire, while other HASGS controllers (ribbon, trigger button, knobs, pressure and acceleration sensors) will enable him to control parameters such as dynamics, density (harmonic and instrumental), register and speed, among others. Furthermore, he will be able to trigger certain algorithmic actions and transformations including capturing melodic contours and recalling previous passages. These may include passages that were generated earlier during the performance, as well as pre-composed (pre-rehearsed) ones.

The aforementioned synergies enabled a higher degree of interactivity between improviser and sight-readers (which is to say, between improvisation and composed response) than with Comprovisador alone. By empowering the soloist with control over selected parameters of either expressive or compositional/formal nature, more consequential interplay is expected. Moreover, the performance mediator is more aware of the macrostructure while controlling the mapping of several parameters. On the other hand, the use of HASGS in different environments— in short, to perform pieces involving the control of electronic sounds or electronic devices – poses challenges and creates learning opportunities regarding the performer experience, since the interaction with such devices is more instantaneous than with composition algorithms, and even more with real-time notation.

Indeciduous

This piece was heavily inspired by the sonic explorations of the duo Suicide⁴. The title hints at the unrelenting nature of the piece and is an anagram for 'suicide' and 'sound'. The first performance of this piece was on March 19, 2018 at Karl Geiringer Hall of the University of California, Santa Barbara on a recital of combined support by the Corwin Chair Endowment and the Center for Research in Electronic Art Technology (CREATE).

⁴https://web.archive.org/web/20110104193113/http://www.zerecords.com/2010/artists_biography.php?id=29 (accessed on May 3, 2020).

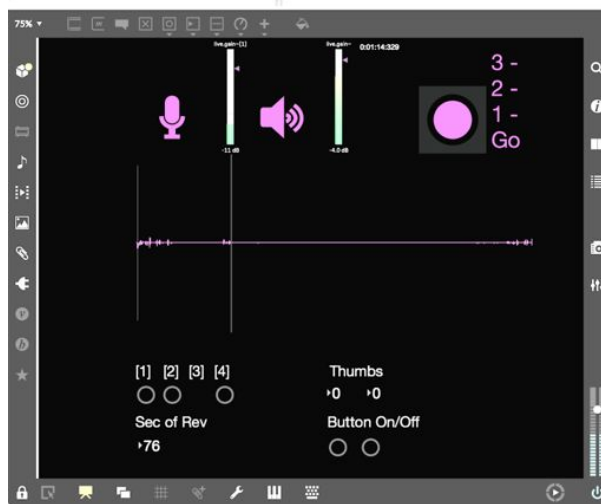
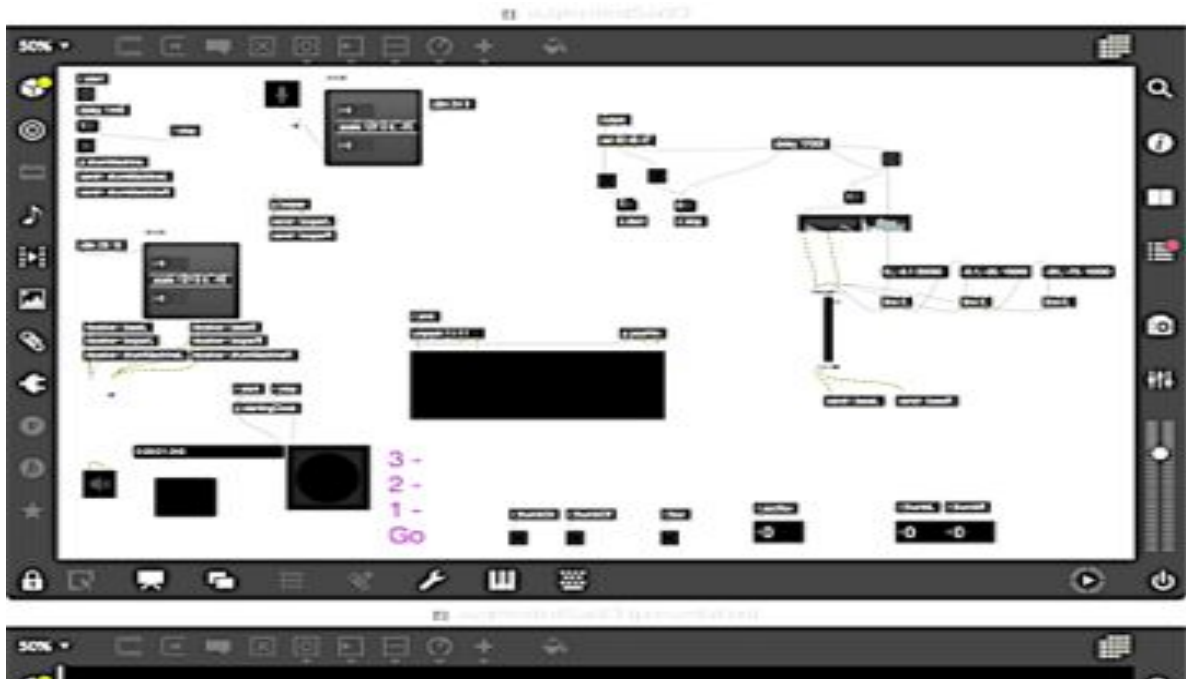


Figure 6. Indeciduous Patching/Presentation modes

This piece must be performed as a free blues over an unrelenting drum machine. Durations notated are a suggestion such as gestures/pitches, except the pitches accented with ✿, these notes are required and must be looped by the performer. Potentiometers on the HASGS control the sax gain (kn1) and the overall gain of the performance (kn2). The ribbon controller (rbn) controls the time of reverb measured in seconds. The thumb pressure sensors control the size of the looping window (pr1) and the location of that looping window (pr2). The keypad starts the drum machine (kp1), stops the drum machine (kp2), triggers events (kp3), and stops looping (kp4). The trigger button (trg) starts and stops recording into the looper.

Conclusions

Starting as an artistic exploratory project, the conception and development of HASGS has also become a research project, including a group of composers and engineers. The project has been developed at the Portuguese Catholic University, University of California Santa

Barbara, ZKM Karlsruhe and McGill University Montreal. The idea of benefiting from this augmentation system was to recover and recast pieces written for other systems using electronics that are already outdated. The system also aimed to retain the focus on the performance keeping gestures centralized into the typical practice of the acoustic instrument, reducing the potential use of external devices as foot pedals, faders or knobs. Taking a reduced approach, the technology chosen to prototype HASGS was developed in order to serve the aesthetic intentions of some of the pieces written for it, avoiding an overload of solutions that could bring artefacts and superficial usage of the augmentation processes, which sometimes occur on augmented instruments prototyped for improvisational purposes. We presented three pieces as case studies that make the use of such system in completely different ways and qualities. Traditional music instruments and digital technology, including new interfaces for music expression, are able to influence and interact mutually creating Augmented Performance environments. The new repertoire written by composers and sound artists contributes for an augmentation system intended to survive in the proliferation of new instruments and interfaces for the musical expression. The outcomes from such experience suggest as well that certain forms of continuous multi parametric mappings are beneficial to create new pieces of music, sound materials and performative environments. Future works include a profound reflection on the performative and notational aspects of each piece, evaluating the mapping strategies of each new piece that is being written for HASGS. The notational aspect of the pieces that are being created is, as well, key for this research and how it could contribute to new interpretative paradigms. In the scope of this paper, we decided to focus on the aesthetics of each piece and on the way how HASGS, as well as an interface of musical intentions can be characterized within the paradigm of instrumentality as assemblage.

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Notes: This evolutionary augmented instrument project is described at <https://www.henriqueportovedo.com/hasgs/>

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Contemporary Jazz: Understanding Jazz Composers' Current Reality

*Javier Subatin*¹

Abstract. This paper focuses on the observation of current reality of contemporary jazz where composition and written music are taking on great importance. It consists in an empirical study which aims to elaborate a general view of the main factors that influence the work of current jazz composers. This perspective on today's jazz allows to consolidate a starting point for more specific and in-depth research. The objective is to understand which are the issues that contemporary jazz composers face today; the compositional techniques; the implications of improvisation and performance in the composition and the aesthetics boundaries of jazz as a musical genre with American origins but adopted by cultures from all around the world. The results may be a subject of interest to educators, students, musicians, composers and researchers that work in the field.

Keywords: Contemporary Jazz; Composition; Improvisation; Performance; Jazz Composers; Jazz Aesthetics; Compositional Process; Jazz Composition Techniques.

Introduction

Considering recent developments in jazz, as Stefano Zenni claims, “the emphasis may shift more and more to composition [rather than improvisation]” (2012). In this respect, composition is taking on greater importance for the contemporary jazz artist.

This study intends to provide an overview of the main factors that influence the work of current jazz composers, allowing the definition of a starting point for more specific and in-depth research.

Accordingly, the question that leads this study is: In what does the current reality of contemporary jazz composers consist? Consequently, this investigation aims to understand which are (i) the issues that contemporary jazz composers face today; (ii) the compositional techniques that they are using; (iii) the implications of improvisation and performance in the compositional process and (iv) the aesthetics boundaries of jazz as a musical genre with American origins but adopted by cultures from all around the world.

Literature review

Looking through various jazz literature, it is possible to find a great number of studies about American jazz history, its origins, its past innovators and their roots in blues and Afro-American culture. We can also find many readings providing more technical and musical information investigating the use of particular scales, chords and voicings, while providing

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details over the arrangements for a number of types of ensembles. Finally, various works explore the subject of the future of jazz.

Nevertheless, it appears difficult to find studies about contemporary jazz, contemporary composition techniques, current jazz trends or today's realities of jazz composers and musicians. It is also hard to find works which explore the subject of jazz as a work of art and the importance of the compositional process and –more in general– the contemporary jazz composition. For a better understanding of the current reality of contemporary jazz, it is then necessary to review the most relevant and recent literature.

Contemporary Jazz in Context

One of the most important characteristics of jazz, which comes from its origins, is the coexistence and mixture of diverse cultures and music genres. Finkelstein here states that jazz is American music, considering America as a host of different cultures (1948). Piazza claims that jazz is a result of a mixture of various elements – “marching bands music, light classical music, opera, nineteenth-century parlour songs, French and Spanish music, as well as the blues” (2005: 47).

In addition, Gioia argues that, although historical musicologists give most importance to blues and ragtime influences in the beginnings of jazz, there were other styles and sounds making part of its gestation (2016). It is also important here to consider that jazz has its history outside of United States of America, even if most American jazz writers try to overlook this fact. Nicholson sets this fact clear when he claims that jazz has acquired histories in other countries, and that some of these histories came from the beginnings of jazz itself (2005).

On the other hand, defining jazz has been always a problem, according to Roland Atkins, who states that “a definition of jazz commanding universal respect has yet to be found” (1996: 12). On this matter, Piazza reflects on what makes jazz what it is, noticing that there is no definitive answer to this question. He observes that jazz is a hybrid form of art, between popular and erudite. Nevertheless, when Finkelstein defines bebop², he asserts that bebop works as a folk art, but one that demands formal musical education and an acute sensitivity. In addition, Keith Jarrett claims, in an interview, that jazz is folk music, and works like a *tribal language* (Walsed, 2014).

Considering all these contributions, it is difficult to find an aesthetic approach to jazz. In this respect, Robert Kraut claims that jazz is a form of art where performances are the events that an aesthetic theory should consider (2005). On this matter, Gioia notes that we should develop an aesthetic theory able to include irregularities: thus considering jazz as an improvised art where mistakes are inevitable (1990: 56).

Therefore, if we consider Zenni's statement by which “[j]azz is primarily a player's and improviser's art” (2012), we could apply it to both Kraut (*i.e.* the player) and Gioia's (*i.e.* the improviser) theories. It is then possible to conclude that there is a lack of studies focusing on an aesthetic approach to contemporary jazz, where the composition takes on a foremost importance, being written, improvised or composed in the moment.

Concerning jazz arranging and composition, it is possible to find any kind of material but, almost always, with the same information. According to Peter Watrous, there are a huge number of books about how to play jazz, most of which treat the same material in a similar

² The Bebop was the current jazz-style when he was writing (1948).

way (Friedwald and Taylor, 2002). More specifically, Collier observes that books exploring jazz composition are based on practices that preserve the style, rather than proposing or stimulating new ways of using the techniques that jazz has developed (2009).

Considering the evolution of jazz, we can find a common agreement regarding trends and periods up to bebop. After this point, this evolution has been always surrounded by a series of polemics about what can be considered jazz. As DeVeaux claims in *Constructing the Jazz Tradition* (1991), jazz music – from its origins until bebop – had followed a straight line in terms of innovation through the evolution of the style. Later, however, it began dissolving into an unsettling combination of many diverse styles. In *The Future of Jazz*, John F. Szwed notes that it is evident, after 1960, that jazz had been marked by a continuous diversity. Collier further states that “audiences have become confused by the sheer variety of music now presented under the name of jazz [...]” (2009: 148) due to the constant debate about what jazz is. In this regard, it is likely that this type of reflection starts to vanish when we begin to consider contemporary jazz. For instance, Finkelstein’s statement of 1948 sounds totally up-to-date: “[t]he question today is no longer whether jazz is to be composed, but whether its composition is to be put on a musical sincere and productive track” (1948: 247).

In view of the future of jazz, we can only find feeble speculations, mostly based in the contemporary debate between the defenders of the tradition and those who want to go beyond the paradigms of the style. Some of these speculations are found in *The Future of Jazz*, a book that presents a dialogue between ten of the most important contemporary jazz critics (Friedwald and Taylor, 2002).

Composition, performance and improvisation

Although the study of composition is traditionally separated from the one of performance, it is well-known that, in Europe, until the first half of the eighteenth century, the figures of composer and interpreter often coincided. Jazz here is one of the few genres of music that preserves the conjunction of these roles today (Cerchiari et al., 2012). With this, Simonton observes that, among jazz players, it is not easy to make a distinction between musical performance and composition (2010).

Accordingly, the relationship between composition and improvisation is constant: “[c]omposition and improvisation are very much related and often cannot be readily distinguished” (Lehmann et al., 2007: 139). One of the approaches about this is that improvisation is like composition, but on a different time scale, which Ashley mentions in *Musical Improvisation*, where improvisation could be considered as “in-the-moment compositions” (Ashley, 2006). Correspondingly, Elliott refers that the term “improvisation” is defined as “a kind of composing-on-the-spot” (1995).

Another approach is to consider composition and improvisation as an activity that implies problem-solving. As Schönberg explains: “[e]very succession of tones produces unrest, conflict, problems. [...] Every musical form can be considered as an attempt to treat this unrest either by halting or limiting it or by solving the problem” (1987: 102), while Berliner mentions that, within the jazz community, there are “conventions for effecting musical saves” (1994: 211), which are used to address to specific musical problems. In this respect, he includes that jazz musicians deal with mistakes during the improvisation as “spontaneous compositional problems requiring immediate musical solutions”. On the same matter, *i.e.* mistakes seen as musical problems to be solved, Whitmer notes that the improviser does not have to correct them but actually use them; in other words, to “incorporate the error” (2011).

To sum up, it is important to say that a profound relationship exists, at the same time, between composition, improvisation and performance. Berliner defines improvisation here as “composing music in performance” (1994: 220), and Elliott argues that “improvising is a complex form of musicing in which one or more people simultaneously compose, interpret and perform a musical work” (1995: 3).

Methodology

The aim of this study is to better understand and contextualise the current reality of jazz composers. In this regard, a collection of data is directly related to the central question of the study, enabling a comparison among the feedbacks of participants (Crotty, 1998). For this purpose, semi-structured interviews were conducted, leading to build up a more detailed and privileged view over several jazz composers of today. It has been applied a phenomenological approach by considering the individual experiences with a look towards a description of universal concepts (Creswell, 2007).

The interviews lasted for 30-60 minutes and were conducted following a specific guideline. This has been surveyed in the same way with each participant, allowing them –by open-ended questions– to develop their personal sights about the current reality of jazz composition; while more precise questions provide specific data that has allowed to understand, in a general way, the issues that concern this study. In order to preserve the validity of the interviewee’s statements, transcriptions have been made available to participants allowing to revise them before analysis³.

In order to collect a rich, comprehensive and representative dataset, participants were selected among experienced and –locally or internationally– recognised contemporary jazz composers from United States, Europe and South America. Due to time restriction and availability of the potential interviewees, eleven participants have been selected, these are: Carla Bley (USA); Dan Tepfer (FRA); Darcy James Argue (USA); David Liebman (USA); Ed Neumeister (USA); Florian Ross (DEU); John Balke (NOR); Julian Arguelles (GBR); Mark Aanderud (MEX); Pablo Mayor (COL); and Reinier Baas (DEU).

An inductive analysis has been done in a descriptive and systematically organised way. Further ahead, I have correlated the already organised data by comparing the statements of the participants. In this way, I aim to find a common ground able to explain and define the topics described above.

Results

The dataset allows the identification of several aspects which I define *codes*, that may influence the composers’ reality: *improvisation*, *individuality*, *musical education*, *jazz aesthetic*, *compositional process*, and *performance* (Figure 1).

³ The author elaborated the discussion based on the transcribed material (approved by the interviews) coming from interviews and exchanges. All citations in this Section come from this material (note of the Editor, R.W.).

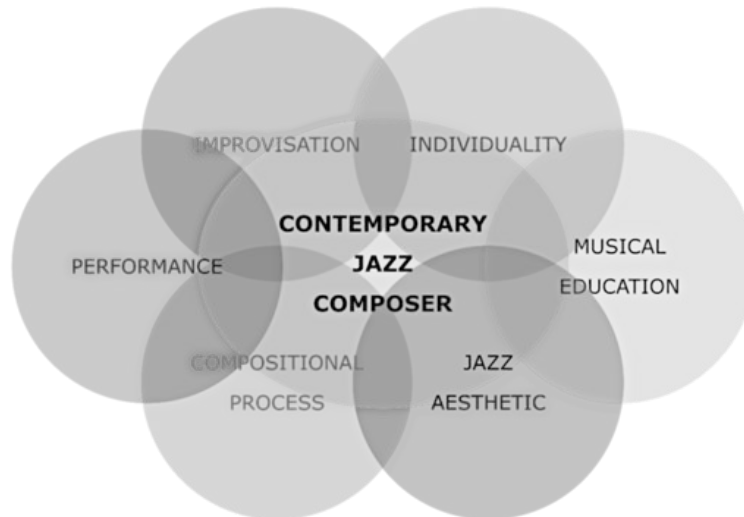


Figure 1. Contemporary jazz composers' current reality

Although, this schematic separation is necessary to facilitate the analysis, these aspects are not isolated in practice, but are rather mutually related and influencing one another, as shown in the Figure.

These *codes* show how a series of relevant questions arise from the initial research question, which may be seen as a second step of investigation. More specifically, how are *improvisation* and *composition* related? And *performance* and *composition*? How does the jazz composer approach the compositional process? How do contemporary jazz composers study music, and jazz language and composition in general? Which is the importance of *individuality* in jazz composition? It is possible to conceive a *jazz aesthetic*?

From this step, I was able to trace a network of codes (Figure 2) which is characterized by the following key relationships:

- The components which may configure an *aesthetics of jazz* – motivations, influences, tradition, concerns about the genre – are a conditioning for meaning and characteristics of *improvisation*, *performance*, *compositional process* and the implications of *individuality*.
- Individuality, improvisation and performance are an intrinsic part of the compositional process, which could be considered a consequence of musical education;
- *Individuality* is also an important aspect of *improvisation* and *performance*, and an important part of the composer's creativity, whereby it affects the *compositional process*.

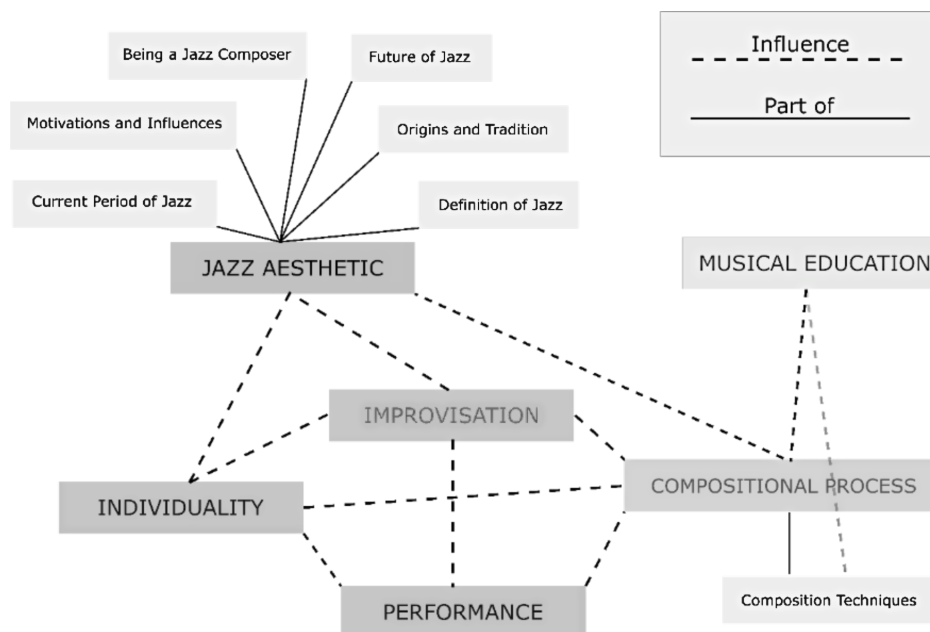


Figure 2. Codes and links

This network allows to develop a series of secondary codes which allow for a better understanding and a more detailed description. Within Musical Education, for instance, five sub-codes are defined: *composition education*, *jazz education*, *self-taught education*, *private education* and *formal education*. On the other hand, the *compositional process*, could be appropriately integrated with the codes of *composition techniques*; while the aesthetics of jazz would include sub-codes *motivations and influences*, *being a jazz composer*, *origins and tradition*, *current period of jazz*, *future of jazz* and *definition of jazz* (Figure 2).

Taking the above into account, essential findings are taken in consideration:

Musical Education.

The analysis shows that the way in which composers learned music is directly connected to their personal style, and –more specifically– to their personal approach to music which impact on the *compositional process*. Moreover, another important aspect consists in the reading and studying books, the curiosity and the research of a thorough understanding of what is used to create music. Finally, most of composers have a part of classical training which seems to have an important role in their compositional skills.

Jazz Aesthetic - Motivations and Influences.

Generally, regarding aesthetics, all participants consider the importance of developing a personal voice. To find in which ways the composer can be genuine and be recognised by his/her individuality and his/her personal musical vocabulary.

Being a Jazz Composer.

One of the crucial concern about being a jazz composer consists in creating pieces that cannot fit into a unique genre of music. Most of participants, in fact, do not consider themselves only jazz composers. Even those who see themselves as jazz composers, do not care about the style

and labels but are concerned about being coherent with their goals in the creative process. Currently, jazz composers, more than other type of composers, seem to stay in between different genres, they don't want to limit their creativity to an exclusive style of music.

Origins and Tradition.

The American origins of jazz are acknowledged by all participants but all of them consider, in different ways, that today jazz is not only American. A number of statements confirm the limited importance of this matter: contemporary jazz composers seem more interested in music-making than in debating about categories, labels, and origins.

Current Period and Future of Jazz.

Generally, all participants recognize music globalisation and the cross-contamination between genres which may lead to a great variety of jazz styles. The ideas regarding the future of jazz appear to be similar to the vision to the current period where the division of styles is progressively fading away.

Definition of jazz.

The most representative aspects of jazz are: improvisation, swing [rhythmic feel] and permeability with other genres. But it is also evident that jazz could be seen as more than a genre but a language or a philosophy and even being defined with other terms, such "contemporary improvised music". In these cases, there is an effort to emphasise more recent features disregarding older ones which may appear not to be representative anymore of current jazz.

Individuality.

This aspect is a very important aspect in jazz and it has two facets: (i) the individuality of musicians who play the composition: the prior knowledge of performers who will play a piece is a crucial factor in compositional process; (ii) the individuality seen as a way to develop a personal style which allows recognition and identification of uniqueness of composer.

Performance.

The performance carries many variables that could be considered because of the effects that may have on the composition itself. As Carla Bley (from now on CB) said: "if the performance is not good the composition is worthless". Among the factors that could affect the performance and with which jazz composers have to deal, one can highlight (i) the rehearsal time; (ii) the musical circumstances (*e.g.* the audience and the acoustic of the venue); and (iii) non-musical problems, such logistic or personal difficulties among band members.

Improvisation.

This aspect incorporates a series of different considerations which are schematized considering the complex relationship between improvisation and composition:

1. Improvisation as Composition in a different timeframe: where composition could be seen as slow improvisation and *vice versa*.
2. The soloist problem (*i.e.* the implications of the solo part in jazz composition): where the composer must deal with the capability of the soloist of being coherent with the composition.
3. Improvisation as a tool for composition: where improvisation works as a means to create or develop musical material.

Compositional Process.

From the analysis, it emerges that both methodological and intuitive approaches are crucial components in the compositional process. All participants clarify how the compositional process is always different. However, Ed Neumeister (from now on EN) describes clearly his methodological approach which consists of four compositional steps. This stepwise description works as a model for all participants and is characterized by four phases:

1. Source Material / Starting Idea

The *source material* is represented by the fundamental ideas of a composition, it is the material that will be developed during the compositional process. This *source* can be musical or conceptual or anything that serves as a starting point. EN, for instance, has a sketchbook where he works out the *source material*: "I begin working on source material and basic sketching on this book here [he shows his notebook]" (Figure 3).

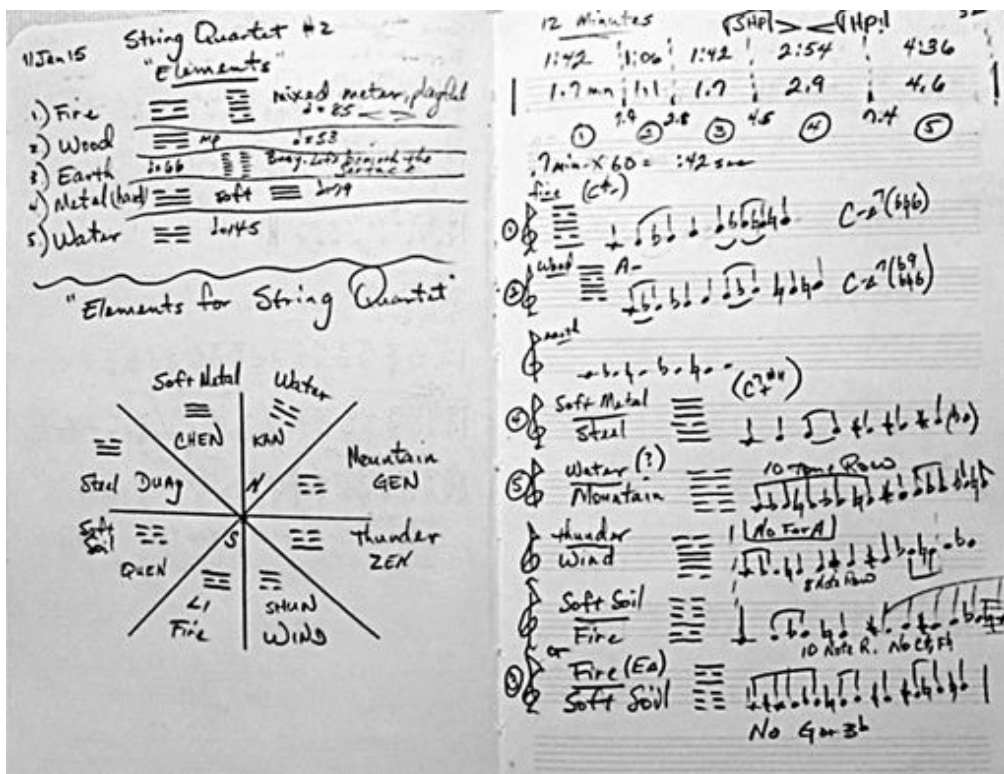


Figure 3. "This particular piece was for string quartet, and I was using information from the I-Ching". Ed Neumeister's sketchbook (image shown with the permission of the author).

Mark Aanderud (from now on MA) explains how, as a *starting idea*, he tries to grasp the right mood and character of the music he is going to compose. Later, he starts to experiment with “rhythm, the baseline, sometimes a series of chords”. This material may be considered as a *source material*. Similarly, John Balke (from now on JB) talks about melodies that come up to his mind:

My head keeps coming up with different ideas that are very thematic and melodic and very clear. So, I try to write all of them, and sometimes I use them and sometimes I don't [...]. As often as possible I try to sit down and make a polyphonic grid of lines and patterns as an artist would make a sketch. Sometimes I can use those themes and integrate [them] into other compositions.

Reinier Baas (from now on RB) illustrates how he tries to develop ideas and construct systems as *source material*:

When you have one cool leak on the guitar, when it is a melody, I try to write down all the different options, all the permutations like retrograde, transposition diatonically or chromatically, rhythmic transposition and all the inversions. For every parameter of music, I try to have my little bag of tricks to develop an idea.

In addition, Pablo Mayor (from now on PM) talks about a sort of philosophy that – during his compositional process – assumes the role of *source material*. He always seeks, philosophically, a balance between rhythm, melody and interesting harmonies which allow the music to have a sense of dancing or corporeal movement. He also uses to imagine a story, as a *starting idea* that he is going to portray in the music he is composing. This strategy permits him to develop much more clearly what he wants to write and the sound he has in his mind.

Besides, Darcy James Argue (from now on DJA) explains how he uses improvisation to discover the first ideas to develop the *source material*: “[I will] find something and then refine it and shape it and move around a little bit in terms of getting the right shape [...] to proceed”. Furthermore, Dan Tepfer (from now on DT) clarifies that his process starts from an idea that could be theoretical or structural, putting himself “inside constraints” as an initial idea from which he can work “more efficiently instead of having unlimited options”.

Moreover, CB talks about how the search for a *starting idea* affects her process:

I had no ideas, I sat at the piano, and finally, I got a very small idea, maybe two or three notes that went together. The next day I looked at these two or three notes, and I got a little bit better idea of what I was doing. I thought ‘this might be interesting’. So, I wrote one-half of a page full of ideas. The third day [...] I looked at my two pages, and I said: ‘well, I think I like that one idea, I’m going to work on that one’. It took a long time, it took three days before I got something I was interested in working on.

2. Architectural development

Generally, participants depict the development of the *starting ideas* or the *source material* as a sort of architectural organisation of successive steps or layers. This stage seems to be central in music composition.

EN described how he sketches this musical architecture after having defined the *source material*:

I start to line up the form of my piece; how long it is, what the instrumentation is. Then I pick a tempo and a mood or a vibe or a combination, depending on how long the piece is. So, I make all these basic decisions at the very beginning and then, once I know, more or less, the length of the piece and the basic structure, then, I map it up, still in my sketchbook (Fig 4).



Figure 4. Ed Neumeister's sketchbook (image shown with the permission of the author).

JB, on the other hand, uses the term “stepping stones” to describe a more flexible architectural development:

I use the compositional elements as stepping stones that can change the music from one level to another. I like to synthesise the composed elements into smaller forms that can be inserted and then have a lot of freedom in between and around that. I use compositions more like signals that can change the flow of the music.

3. Orchestration

This phase could be included in the *Architectural development* and usually, involves the use of a dedicated software. EN described this step as a process of “refining and editing. At this stage, all the articulations and all the dynamics and all the details are already in the piece”. First, he uses to compose with a simple orchestration of piano, bass and a melodic instrument and when the composition is finished he passes to the orchestration and distribution of the material among instruments.

4. Final Check-up

This is the last stage where the composer verifies that the work is completed as expected. On this matter, EN clarifies:

once I move to the score, I don't listen much to the computer sounds, except maybe at the end, just to make sure there are no wrong notes or other mistakes.

Composition Techniques.

Each participant has his own way to approach to music composition. Even if it is possible to generalise the steps in this process, the techniques that composers use to advance are personal, and this process is an important aspect of the *individuality* and the development of a personal style. Some of these techniques have emerged that are worth mentioning, in order to understand better how contemporary jazz composer deal with music creativity.

David Liebman explains, for instance, that his methods are mainly based on his experience in trials and errors. He observes that one way of composing is the development of “musical problems to be solved” or “musical challenges”, for example, “a study of the interval of the fourth or a study involving the diminished scale”. On the other hand, MA describes how he bases his compositional process on the identification of which element he does not want to use:

I really don't think too much about techniques, in general, I think about what I don't want to use. And neither about what I want to use because it restricts me and limits my creativity.

JB provides verbal explanations to illustrate “what is the intention and to suggest how [the] music can develop”. This is an important aspect because he composes using “flexible material for the ensemble to get together and create music that can be different from concert to concert”. His practices of writing a composition often consist in “to sit down and make a polyphonic grid of lines and patterns”.

This concept of the grid or polyphonic lines and patterns emerges in RB's words when he talks about composing music by systems and layers:

I try to write music that has different layers. I want something that catches people's ears when they first listen to the music [...]. Then, put there more complex stuff underneath. I would like people who listen to my music to discover new things every time. So, this kind of layer thing is something I always think about.

He also refers to a different technique to develop ideas considering each parameter separately. Regarding rhythm, for instance, he explains that it “is nice and easy because you can write it all down, there is a limited amount of options”. Melody is, instead, “more about composition techniques like [...] retrograde, rhythmic transposition, inversion”. Concerning harmony, he described his own personal technique:

I came up with this wear scale, and then, I try to make a system out of it [...]

He writes it as a skype message:

1 b2/2/#2 3 4/#4 5 b6/6/#6 maj7

So, you got 1, 3, 5 and 7. A normal major/major7 arpeggio, and then, for 2, you can pick either three options. Either you use the b2 or 2 or #2. For the 4

is the same thing, 4 or #4. And for the 6 you have three options too, b6, which in C would be Ab; 6, which would be A and #6, which in C would be A#, that sounds like a minor 7, but it's a leading tone for a B, for a major 7. So, that's 18 scales

He writes another message:

18 scales x 7 degrees.

With 7 degrees, each.

Then, there are different ways of approaching. For example, Cmaj7 with #2, #4 and #6; that would be an A minor triad and a F# triad

He writes another message:

Cmaj7b2#4#6: Em + F# with C in the bass.

That's a different way of looking at the same. And then, the same thing for all the 7 degrees of the scale.

PM describes how he uses the analysis of rhythms as a technique:

I analyse a lot the rhythms, it is a technique that I use. I transcribe the rhythms, and I base my arrangements on that. If I find two or three songs that I like a lot, I make a complete rhythmic transcription of all the melodies and all the compings and the rhythms of the drums. And I play with this library of rhythms assigning them to different instruments and it starts to sound in the style I want.

Another approach to composition is mentioned by DT. He uses algorithms and improvisation as a technique:

Another approach [...] is using algorithms that response when I improvise. The last movement of this piece I wrote, for string quartet and piano, is an algorithm where every note played, is then, transposed canonically down in minor ninths.

In contrast, CB illustrates one of her amusing techniques:

I wrote the letters of the notes in twelve pieces of paper, little tiny pieces of paper, the one said A, the next one said A flat and all the notes in the chromatic scale, every note possible. I put them in a paper bag, and I shook the bag, and then I reach them for the first note. I did not ask if that was a good note or a bad note because the first note cannot be good or bad, is just one note, it is no music yet, maybe it could be, but I've never had it happen that way. Then I put that note back in the bag, I shook the bag again, and I took out the next note and sometimes it is the same note, that's an idea too. If you have two A flat, that could be the beginning of a melody. By the time, you get to the third or fourth note, sometimes you say, "this is not going to work" but I'll keep doing it anyway. Or sometimes you say, "what a great idea that four notes is a perfectly good starting idea and I'm not going to need the paper bag anymore". I've got my idea.

Conclusions

Within the main concerns about the jazz composers' current reality, the results of this study reveal that the implications about the relation between *composition*, *improvisation* and *performance* are significant. It is possible to conclude that *improvisation* in jazz is not only

the soloing moment or the non-written music during the performance. Improvisation is an intrinsic tool for the jazz composer serving as a method to create and develop musical ideas. *Performance*, on the other hand, has crucial role in jazz composition: it affects composer's musical decisions, being conditioned by interpretation and individuality of different musicians.

From an aesthetic perspective, the processes of institutionalisation and globalisation affect jazz that currently embraces a variety of musical styles which mix together into a kind of music that is hardly represented by the term 'jazz'. Nonetheless, this type of music, that someone may prefer to define 'contemporary improvised music' is the result of the historical evolution of jazz. Even if this is a recurrent theme in jazz literature, we found that, in general, composers are not much concerned about how their music is labelled but about being coherent, individual and committed to their creative process.

Finally, this study shows that compositional processes and techniques are subjects of interest for jazz composers. Four stages in the compositional process emerge that could match with diverse ways of composing music. In particular, the value of the *source material* as a creative concern appear central in this investigation, together with form, melody, harmony and orchestration. Therefore, this study put the bases for a better understanding of the context of contemporary jazz composers and represent a fruitful starting point for future investigations.

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Si amanece, nos vamos: From a Goya print to a new way of using guitar multiphonics

Rita Torres¹

Abstract. The technique of guitar multiphonics gives rise to sounds with colours that are quite distinct from those of sounds produced through traditional techniques, being easier to perceive multiple pitches therein. In spite of the recent interest on this unconventional playing technique, there are gaps that still need to be bridged. One of these gaps concerns the usage of the technique: there is a lack of variation in the beginning and/or end of the sounds. This gap was narrowed unintentionally by the author when conducting artistic research during the implementation of scientific results from a thorough and innovative research on guitar multiphonics in a musical composition. She arrived at a new form of usage of this technique while investigating how to play it simultaneously with and on the same string as a gesture that was inspired by the imagery of the print that was chosen for the departure of the compositional process. This new way of using multiphonics not only narrows the above-mentioned gap but also allows overcoming the guitar's short-sustain problem innovatively. This article provides step-by-step descriptions concerning the research and the piece, which are complemented with pictures, score excerpts and audio and video examples, as well as explanations of the acoustical phenomena and the musical and guitar terminology

Keywords: tone colour research; unconventional performing techniques; new music; Los Caprichos.

Introduction²

In 2015, I wrote a piece for a project of guitarist Jürgen Ruck entitled *Caprichos Goyescos*. The project consists of short caprichos for solo guitar by various composers, whose writing should depart from a print of the set *Los Caprichos* (1797-1798) by the Spanish artist Francisco Goya y Lucientes. At the same time, the piece should be written in the context of my research on guitar multiphonics, therefore making use of this unconventional performing technique.

The piece – entitled *Si amanece, nos vamos* (*If day breaks, we will be off*) – was premiered in a large church. But I was not told to take amplification into account in the compositional process. Therefore, I decided to conceive it for a small or medium-sized concert room appropriated for a guitar recital, since other performances would certainly take place in a similar environment. Nevertheless, the amplification of multiphonics sounds is one of the main concerns of my research (Torres, 2015: 73-93).

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²Part of the material in this text has been previously published in: Torres R. (2020). The Presence of a Mysterious Black Silhouette: From a Print to a New Form of Usage of Guitar Multiphonics. *Leonardo Music Journal*, 30, 73–78.

The technique of guitar multiphonics

The technique of guitar multiphonics³ works better on wound strings. Like the technique of harmonics, it consists in damping out some of the vibrational modes of the string. Achieved by lightly touching it during or after its excitation (or both; Figure 1 shows the difference between lightly touching the string and stopping it).

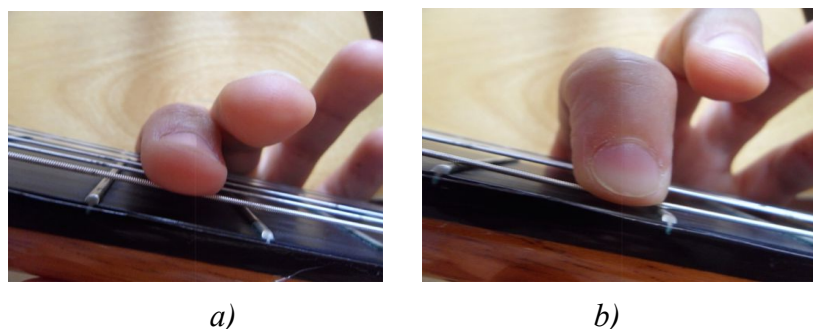


Figure 1. a) Lightly touched string; b) Stopped string.

Unlike harmonics, with multiphonics the filtering of the vibrational modes is not systematic with respect to the mode number, which makes the perception of multiple pitches easier (Torres, 2015: 66-68)⁴. I called the sound's partials that correspond to the more easily perceived pitches *main partials* (Torres, 2015: 72-73)⁵. Also contrary to harmonics, the technique is continuously possible along the string. Most sounds present unusual colours and a low loudness level, being difficult to perceive some of its components at a distance.

Up to now, I have identified multiphonics in only 42 scores by other authors (Torres, 2015: 50-64)⁶. In most compositions the technique is used conventionally, which is, the string is plucked with a single stroke while lightly touched and is left to ring untouched. Variation in the beginning and/or end of the sounds can be found in five pieces and in a piece of mine⁷. In these compositions the sounds are produced (1) with a *quasi pizzicato*-Bartók (i.e., the string is softly pulled but does not hit the frets) (Nassif, 2010: 2, 3, 11, 19, 20); (2) after slowly increasing the thumb nail's touch pressure on a vibrating open string (Lopes, 2009: 8); (3) with a *legato* articulation departing from an open string (Lentz, 2014: 6, 7); (4) with

³ The term *multiphonics* originated in the adjective *multiphonic*, possibly first used in 1967 in the translation of a book (Bartolozzi, 1967) to characterise the sounds of the corresponding technique on woodwinds.

⁴ For example, when we play harmonics at fret XII (the middle of the string), all odd vibrational modes (v.ms.) are damped out – not taking into account the non-excitation of the v.ms. that have nodes at the excitation location, the mode numbers of the sound's partials are then 2, 4, 6, 8, 10, 12, 14, ... – this is exemplified in Audio Example 1. When we play multiphonics at that same fret, the lowest odd v.ms. are not damped out – up to which of them depends on the exact touch pressure, which nevertheless has to be extremely light; the mode numbers of the partials of the sound are then, for example, 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14... – this is exemplified in Audio Example 2. All audio and video examples are retrievable from <http://ritatorres.eu/NCMM18-Torres.zip>

⁵ In the example of footnote 2, the main partial of the sound of harmonics has mode number 2; the mode numbers of the main partials of the sound of multiphonics are 1 and 2.

⁶ The following pieces were not covered by this review: Lopes, José M. (2009). *Estudo Numerus Nove* [composed 1989]. Lisboa: AvA Musical Editions; López López, José M. (2011). *Impresiones y Paisajes*. Valencia: Piles; Jang, Alex. (2016). *A gray, Bent Interior Horizon*. Victoria, B.C.: the composer; Carvalho Diogo. (2016). *Reveal*. Gainesville, FL: the composer; Aranda, Yesid Fonseca. (2017) *1+1 et non franchement 2* [composed 2016]. Bern: the composer.

⁷ I have also used multiphonics, albeit conventionally, in the following pieces: Torres, Rita. (2012). *Le tombeau de Falla*. Karlsruhe: the composer; Torres, Rita. (2015). *The fireflies, twinkling among leaves, make the stars wonder*. Lisboa: the composer; Torres, Rita. (in press). *Luminescências*. In *Nova Música para Novos Músicos*, vol. 2. Aveiro: Arte no Tempo.

*tremolato*⁸ (Torres, 2014: part VI); (5) with bow (Radulescu, 1985: 2); (6) conventionally but are damped afterwards (a) abruptly with *staccato* (Lentz, 2014: 6) and (b) progressively by leaving the touching finger on the string (Rojko, 1984: 1, 3). None of the scientific publications by other authors explores different forms of usage of the technique (Torres, 2015: 45-50).⁹

The print

I chose *Capricho* number 71 (the set consists of 80 prints), entitled *Si amanece, nos Vamos*. This print depicts a group of five witches resting under a starry sky; behind them is the black silhouette of a figure with wings¹⁰. Four witches are sitting on the ground and one is sitting on “an excrescence in a shape of a disembodied anus, a signifier of the inverted nature of witchcraft” (Tal, 2006: 158). This witch is pointing to the sky and has two small children strapped to her back (at least) – supposedly their meal, as witches were thought to consume the flesh of babies at Sabbats. This meal was one of the events of the standard set that was thought to occur during these meetings:

[t]he Sabbat was located in a churchyard, the foot of the gallows or at the summit of a mountain at night, usually at midnight or at the latest by dawn. Flying on a broomstick or an animal was the means of travel to the night-time meeting where the Devil would also appear often in the form of an animal. The witches glorified the Devil, kneeling down to him, kissing on his left foot or anus. Witches would confess their sins and were punished for not performing enough *maleficia*. There was a service, a parody of the divine service, and then a meal followed by “an orgiastic dance to the sound of trumpets, fifes and drums”. ... The Devil would have sexual relations with the participants, and he would then dismiss the group. (Dore, 2008: 13)

I therefore assumed that the scene took place before the meal of a Sabbat and interpreted the silhouette as a symbol of the devil that is yet to arrive. For which the witches have just settled down and are getting ready for their ritual. In fact, contrary to other witchcraft prints of *Los Caprichos*, in which the witches are flying on broomsticks, this print suggests quietness and not movement, which is emphasised by the starry night scenery. However, the black silhouette creates an atmosphere of suspense.

The idea

The underlying suspense created by the black silhouette inspired the main gesture of the piece: a dark pedal tone with the lowest pitch of the traditional tuning of the guitar¹¹. I chose to produce this pedal tone by exciting the string with *tremolato* in *pizzicato* (with *pizzicato*, the string is damped at the bridge with the side of the hand palm, as in Figure 2).

⁸ With *tremolato*, the string is repeatedly plucked downwards and upwards with a single exciter and a rapid movement.

⁹ Torres and Ferreira-Lopes (2018) provided an updated list of publications dealing with guitar multiphonics. This list did not include the following publication: Lopes, José M. (2015). *A música contemporânea portuguesa para guitarra de 1983 a 2008*. (Doctoral Thesis). Universidade de Aveiro. Retrieved from <http://hdl.handle.net/10773/27330>.

¹⁰ For a reproduction of the print search for *Si amanece, nos Vamos* at: <http://www.museodelprado.es/coleccion>. See also Figure 6.

¹¹ A pedal tone is a continuously sustained note. The lowest pitch in the guitar’s traditional tuning is E on the open string 6.



Figure 2. Hand position when playing pizzicato (the string is damped at the bridge with the side of the hand palm).

Although it was a personal choice, the usage of *tremolato* instead of *tremolo* avoids differences in the sound, given that with *tremolo* the excitation location differs with each finger.¹²

Another gesture with its origin in the print is the rubbing of the strings with the hand palm. Although absent from the print's imagery, the arrival on broomsticks and their presence nearby is implicit, and this brought to my mind the wind noise in a(n imaginary) broomstick flight, as well as the noise of a broomstick sweeping the ground, both of which inspired the string-rubbing noise.

The sounds of multiphonics, although not inspired by the imagery of the print because they were always planned to be used, ended up serving to symbolise the witches and the starry sky, as is mentioned in Section 8 (The piece).

The problem

The pedal tone in *tremolato* posed two constraints: (1) the possibilities of excitation of the other strings by the hand playing it are limited; (2) I wanted to play simultaneously with, and, on the same string as the technique of multiphonics, because the results that I would implement (in fact, assumptions made therefrom) would be for string 6. Therefore, I decided to explore the *tremolato* as form of excitation of the string when playing multiphonics and a pedal tone with the open string's pitch (which is the pitch of the sound's fundamental frequency) is to be perceived, and to build the piece around this idea.

The research

When a string is excited with *tremolato*, the part of the sound that is repeated is the loudest. This allows perceiving (or more clearly apprehending) the very rapid decay of some components of multiphonics sounds, like those that originate from vibrational modes strongly damped due to the continuous touching of the string, as is the case of the fundamental frequency. If the string is excited in *pizzicato* however, as is desired for the pedal tone, most sound components are damped out. When playing multiphonics with *tremolato*, the string needs then to be free from the *pizzicato* (*normale*). In this transition between the pedal tone alone in *pizzicato* and the sound of multiphonics with pedal tone played *normale*, a

¹² With *tremolo* the thumb, ring finger, middle finger and index finger are rapidly alternated.

discrepancy is noticed in the timbre of the pedal tone. This undesired discrepancy is smoothed by gradually increasing the touch pressure while gradually releasing the *pizzicato* and vice-versa. This effect is emphasised by departing from low dynamics, increasing it in the first part, and decreasing it in the second part. This form of usage had not been used before and presents an innovative way of overcoming the short-sustain problem of the guitar.

The sounds of multiphonics requested in the piece are of two kinds: sounds with unusual colours and sounds with more conventional colours played at usual harmonics locations¹³. The former sounds are produced with *very light* touch pressure. If *light* touch pressure is used – this is the pressure I assumed as the usual employment for harmonics – the pedal tone is too weak and the sound too dark. With *extremely light* touch pressure, the pedal tone is too strong¹⁴. To compensate the loss of brightness of the sounds due to the uninterrupted touch of the string¹⁵, the excitation location that in *pizzicato* is near the rosette (*ordinario*)¹⁶, is either *near* the bridge (*sul pont.*) or *not so near* the bridge (*poco sul pont.*). *Very near* the bridge (*molto sul pont.*)¹⁷, the pedal tone is, on the one hand weaker¹⁸, and on the other hand too bright.

The production of multiphonics sounds at usual harmonics locations is possible because the continuous *tremolato* allows playing this kind of sound without failing. When the string is excited conventionally, the feasibility of multiphonics (i.e., the degree of achieving the technique) at the usual harmonics locations is low, because the touch pressure needs to be *extremely light*¹⁹, which is difficult to control (this is nevertheless easier when touching and exciting with the same hand, as in Figure 3); moreover, for lasting sounds the touch duration needs to be *extremely short*.



Figure 3. Touching and excitation of the string with the same hand (the index finger touches the string and the middle finger excites it; the latter may be also carried out by the ring finger or the thumb).

Playing multiphonics at the usual harmonics locations with *tremolato* does not present feasibility problems, because the continuous repetition of the string's excitation allows for an unnoticed correction of the touch pressure. I decided to use some of these sounds before introducing the sounds of more unusual colours. The *pizzicato* needs not to be released,

¹³ The more easily perceivable pitches of the sounds of multiphonics at these locations (the most common are frets V, VII, XII, XIX) are those of the open string and the usual harmonics sound.

¹⁴ V.m. 1 is the most excitable mode. The excitation strength of a v.m. is inversely proportional to the square of its mode number (Benade, 1990: 100).

¹⁵ The damping of the highest v.ms. of the string is greater because the finger covers a great part of those v.ms.' loops. The uninterrupted touch also affects the perception of the main partials of the sounds. This is, however, only significant when there is amplification, otherwise, the audience would not perceive such partials.

¹⁶ The rosette is the decoration of the sound hole. Exciting the string here ensures a strong excitation of v.m. 1, because the v.m. has a significant loop displacement at this location.

¹⁷ Here all v.ms. have a loop. Therefore, it is assured that they are actually all being excited and that the excitation of the higher v.ms. is maximized, because the excitation location is near their anti-node (the place of maximum displacement).

¹⁸ *Very near* the bridge is much nearer to a node of v.m. 1 than to its anti-node, therefore it is more difficult to excite the v.m.

¹⁹ This is the case of most locations when the open string's pitch must be perceived in the sounds.

because it does not damp out the vibrational modes producing the other perceived pitch of the sound. However, to produce sounds in which the timbre of the pedal tone is similar to that of the pedal tone alone, the string needs to be less damped than in the conventional *pizzicato* (thus the sound of a single pluck lasts longer) – denominated *light pizzicato*. This makes the upper pitch much louder than the pedal tone, for which, for a balanced sound, the string needs to be touched with *extremely light* pressure²⁰.

Having tried all this over and over with the (index) fingernail playing the *tremolato*, my fingernail was worn out. I decided then to use a plectrum. This allowed an improvement of the sounds' balance and brightness, especially at the desired low dynamic for the pedal tone. This is because plucking with the plectrum compensates the damping of the vibrational modes due to the uninterrupted touching²¹, especially of the vibrational modes with smaller loops²². The factors influencing the sound are: the plectrum's characteristics, the angle of the plectrum with the string and the direction of the plucking movement. The latter is opposite to the conventional direction. That is, the downward movement heads towards the sound hole instead of towards the bridge (the movement's angle with the strings is about 45 degrees). This is because it causes less noise, which is related to the angle of the string's winding. Figure 4 shows the orientation of the plectrum in each of these movements. In regard to the third dimension of the movement, this is parallel to the soundboard, to maintain the sound's balance²³. The plectrum is mostly at an angle with the string higher than zero degrees and lower than 45 degrees. This not only ensures a smooth *tremolato* playing, but also avoids the releasing noise and the bright sound (especially in what concerns to the pedal tone) produced by the plectrum at zero degrees²⁴. Nevertheless, the plectrum should not be too stiff and its edge not too wide, to ensure a strong presence of the higher partials of the unusual sounds of multiphonics. Video Examples 1 and 2 show in detail this new form of usage.

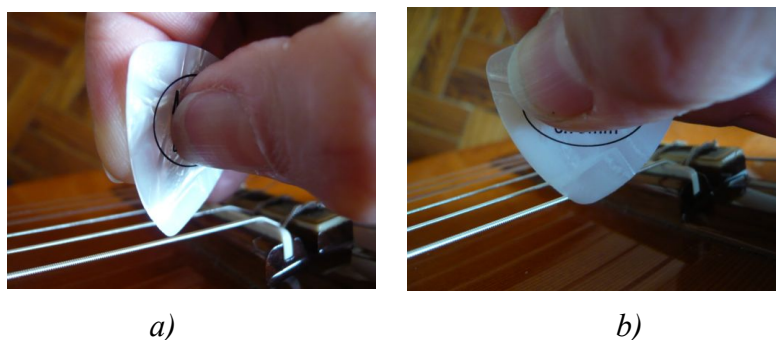


Figure 4. a) Plectrum orientation required in the piece (downward movement towards the sound hole); b) Conventional plectrum orientation (downward movement towards the bridge)

²⁰ Contrary to the v.m. that gives rise to the upper partial, v.m. 1 is touched at its loop, therefore it suffers greater damping.

²¹ There is less damping of the string's v.ms. in the excitation, because the plectrum is a narrower exciter.

²² The non-excitation of the higher v.ms. due to the covering by the nail of two consecutive nodes thereof is avoided with the use of the plectrum.

²³ The greater the movement's component perpendicular to the soundboard is on release, the higher the excitation of the lower v.ms. of the soundboard (in a rest stroke, the perpendicular component tends to be greater than in a free stroke). The soundboard is what actually moves the air molecules. The effect of the string is very small. This is because the string "has a relatively small surface area, and therefore cannot produce a large disturbance of the air. ... any compression wave coming from one side of the string is effectively cancelled by a wave of rarefaction from the other" (Taylor, 1978: 33). This is called "acoustic short circuit" (Bader, 2005: 33), because diffraction takes place since the string's diameter is very small compared with the wavelength.

²⁴ This is because at zero degrees the string is released abruptly, which increases the excitation of the higher v.ms. of the soundboard (Taylor, 1978: 26-27). An angle higher than zero assures a smooth release of the string.

The performance instructions

The performance instructions are depicted in Figure 5²⁵. They contain two sections: one related with the *tremolato* and the *pizzicato*, and other concerning multiphonics. The first paragraph of the first section mentions the number of attacks per beat of the *tremolato*; informs about the need of using the plectrum during the performance, explaining the angle of the plectrum with the string and the direction of the plucking movement; and clarifies how long a sound should last when played with the *light pizzicato*. The second paragraph of the first section explains the easiest way to play the *tremolato*, this according to myself and the guitar player Jürgen Ruck (point 3).

The second section of the performance instructions explains the notation of the main components of multiphonics sounds, how strong the touching should be and how long it should last and, finally, how to situate the touch locations and interpret their notation.

PERFORMANCE INSTRUCTIONS

This piece is to be performed in a small or medium-sized room appropriate for a guitar recital.

The **tremolati** are all measured, of about 12 attacks per beat. When notated with an accent, accentuate all attacks. A **plectrum** is necessary throughout most of the piece, always to pluck the string with a movement parallel to the soundboard, and mostly held at an angle with the string higher than 0° and lower than 45°. The direction of the movement is opposite to the conventional direction, that is, the downward movement heads towards the sound hole with an angle with the strings of about 45 degrees (the back of the thumb faces then the bridge), because there is less friction noise (this is due to the winding direction). With the "light *pizz.*", the sound should last for 5-6 s.

For the composer and/or guitarists that have worked the piece so far, the *tremolato* playing was found to be easier if:

- (1) the movement of the plectrum stems from the wrist and not the arm (an arm movement produces nevertheless unbalanced sounds);
- (2) in the *crescendi*, the amplitude of the wrist movement is increased;
- (3) when sliding the hand on the bridge, scotch tape is used on the lower hand palm, and the plectrum and thumb are perpendicular to the soundboard (it was also found to be more comfortable to play with the neck almost parallel to the floor);
- (4) from bar 61 to 74, the wrist rests on the soundboard;
- (5) in bars 74 to 78 and in the *crescendo* of the last bar, the angle of the plectrum with the string is of 0° and the thumb is parallel to the soundboard;
- (6) from bar 75 to the end, the wrist is in its conventional position.

²⁵ Like the piece, the performance instructions have been suffering minor changes since the premiere (the piece was performed five times up to the submission of the final version of this paper).

With **multiphonics (M)**, a sound arises more rich in colour than with harmonics. The partial(s) of the open-string sound that name the loudest pitches that may be perceived is/are notated in parentheses with their number(s) and pitch(es) in the guitar transposition. There are two degrees, up to which the touch pressure increases: extremely light and very light, both lighter than the usual harmonics pressure, which in this scale is considered to be light. When the sounds are left to vibrate, use a very short touch duration, instead of the short duration of harmonics. Think of the touch locations between frets as equidistant *virtual frets* resulting from the subdivision of the space between two consecutive frets in the number of parts indicated by the denominator of the fraction above/below the accidental; the fraction's numerator and the accidental's arrow indicate at which *virtual fret* to touch. The fret corresponding to the semitonic accidental is in parentheses. Examples:

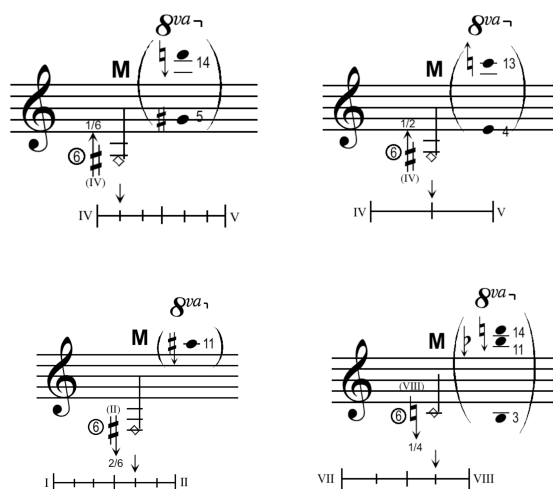


Figure 5. Performance instructions of the piece. Reprinted from *Si amanece, nos vamos* by Rita Torres, 2015, Karlsruhe: the composer.

The piece

The piece has four sections. The introduction consists of only noise *tremolati*. It ends with a continuous transition to the pedal tone that characterises the following section, in which the new form of using multiphonics is employed. Although the pedal tone is absent from the next section, a reminder of the devil still haunts it, as strings 5 and 6 are tapped in tritones. The pedal tone returns in the last section, in which sounds of multiphonics are played continuously along the string, and also left ringing after being attacked with short *tremolati*.

The introduction of the piece, the score lines of which are depicted in Figure 7 (bars 1-12), starts with all strings being rubbed with the hand palm, first with *tremolato* and then with accentuated short gestures, symbolising respectively the witches' broomstick flight and arrival – Figure 6 depicts Jürgen Ruck playing live the first bars of the piece.



Figure 6. Jürgen Ruck playing the beginning of *Si amanece, nos vamos* in a performance at Schloss Ebnet in Freiburg on 29.9.2015; the print was projected behind him during the whole performance (photo: Rita Torres).

The string-rubbing *tremolato* also foreshadows the low-pitched *tremolato* that will be played a few bars later. This is arrived at by cross-fading the rubbing *tremolato* noise with the noise resulting from plucking the muted string 6 in *pizzicato* with an edge of the plectrum, and then unmuting the string to introduce the pedal tone (bars 7-13). At this point, the longest section of the piece starts (Section 1). The plucking noise is progressively reduced by rotating the plectrum to the tip (bars 15-16). Audio Example 3²⁶ contains a recording of the performance of the piece up to this moment.

Section 1 (bars 13-60) may be divided in two parts. In the first part, the new way of using multiphonics (i.e., progressively filtering the sound of an open string and returning thereto) is only employed at usual harmonics locations²⁷ – the score lines of this part can be found in Figure 8, and the recording of the performance in Audio Example 4. In the second part, the new form of multiphonics usage occurs at other locations. Although originally not intended, the more conventional sounds at harmonics locations adequately symbolise the print's starry sky, whereas those of unusual colours at other locations symbolise the witches²⁸. The second part may be subdivided in two phases: in the first phase, after the *pizzicato* is released, the excitation of the string remains *not so close* to the bridge (*poco sul pont.*); whereas in the second phase, the hand continues to slide up to *near* the bridge (*sul pont.*) after the release of the *pizzicato*. Figure 9 contains the score lines of the first phase, and Audio Example 5 corresponds to the recording of this performing part. The score lines of the second phase can be found in Figure 10 and, accordingly, the recording of this part of the performance is the Audio Example 6.

The touch locations that are situated between frets were called *virtual frets*. They were formally established and are easy to visually situate (Torres, 2015: 76-77). In this piece, they were notated with accidentals with an arrow and a fraction, as well the numeral of their closest fret in parentheses (this is merely an aid, as it is redundant). For example, in Figure 9, bar 41, of the five virtual frets that result from the subdivision of a space between frets in six equal parts, the string is touched at the virtual fret that lies below fret II and is closest to it

²⁶ Just to remind that audio and video examples used here are retrievable from <http://ritatorres.eu/NCMM18-Torres.zip>

²⁷ And also at fret IX (the exact location for harmonics is in fact slightly before fret IX but, with the playing conditions used, the result is almost the same).

²⁸ I chose the witches' locations for the sounds' colours. It is a coincidence, as far as I remember, that the number of different sounds is the same as the number of witches depicted in the print.

(thus the arrow pointing downwards and the numerator equal to 1). The pitches in parentheses, other than that of the fundamental, are related with the results from an experiment conducted in the context of the research: they are the pitches of the main partials in the results' highest loudness category for a time segment right after the attack (because this is the part of the sound that is repeated during the *tremolato*); the partials in other categories are not expected to be perceived by an audience.

As depicted in the last bar of Figure 10, Section 1 ends by slightly decelerating the *tremolato*, and then playing it shortly at normal speed with constant accentuation, ending on a beat (Gesture 1). The transition to the next section, the score lines of which can be found in Figure 11 (bars 61-65), consists in repeating Gesture 1, first once at the soundhole, and then four times at the fretboard. Here, the string is muted from the second repetition onwards, and in the last repetition, the *tremolato* is continued and immediately ended by a strong deceleration. The recording of the performance of this transition is the Audio Example 7.

• = ca. 56
 Rub strings crosswise with flat hand at an angle of ca. 45° with strings
 Mute strings lightly
 Guitar
 4/4
 cresc. dal niente *pp* poco cresc. molto cresc. *ff* *f* sempre
 (a tempo)
 5 *p* cresc. poco a poco
 PLECTRUM
 pizz. sempre
 plectrum (plect.): very light plucking with edge (rubbing noise) (keep muting strings with other hand)
 7 change to other hand (maintain angle and direction), crossfading the sound; grab plectrum
 molto cresc. *ff* molto decresc. *p* *ppp* *cresc. poco a poco*
 12 unmute string 6 progressively (noise & tone) (*pizz.* is maintained) plect.: (side) tip (tone) (*pizz.*) light *pizz. sempre*
pp *cresc. poco a poco* *mp* *decresc. poco a poco* *p*

Figure 7. Introduction (bars 1-12) and beginning of Section 1 of the piece (bars 13-17). Reprinted from Si amanece, nos vamos (p. 1) by Rita Torres, 2015, Karlsruhe: the composer.

Figure 8 shows three systems of musical notation for string instruments. Each system consists of a treble clef staff with notes and a bass clef staff with plucking and bowing indications. The first system (bars 23-26) includes dynamics like *cresc.*, *mp decresc.*, *p cresc.*, and *mp decresc.*, along with touch pressure markings: "t.p.: dal niente - extremely light" and "al niente". The second system (bars 27-30) includes "pizz. sempre" and "p sempre". The third system (bars 31-34) includes "p sempre" and touch pressure markings: "touch pressure (t.p.): dal niente - extremely light" and "al niente". Fingerings (e.g., 1, 2, 3, 4, 5) and bowing techniques (e.g., *vib.*, *pizz.*) are also indicated.

Figure 8. First part of Section 1 of the piece, in which the technique of multiphonics is played at usual harmonics locations (t.p.: touch pressure). Reprinted from *Si amanece, nos vamos* (p. 2) by Rita Torres, 2015, Karlsruhe: the composer.

The section that follows (Section 2), the score lines of which are depicted in Figure 12 (bars 66-69), is quite contrasting: strings 5 and 6 are slowly tapped with a regular rhythm²⁹, producing the interval of a tritone (the musical symbol of the devil). This gesture is repeated three times in different transpositions, being the last repetition longer. String 6 is then muted and plucked at fret X with the same rhythm (Gesture 2), which starts the transition to the final section of the piece. In this transition (Figure 12, bars 70-73), Gesture 2 is repeated twice; the second repetition is continued and accelerated to *tremolato*. This is maintained and the string is progressively unmuted until the beginning of the final section of the piece, in which the string is only slightly damped on the nut, an effect similar to the *light pizzicato*. A recording of the performance Section 2 and of the transition to the final section can be found in Audio Example 8.

²⁹ Tapping consists in hammering the string against the fretboard.

(pizz.)-----normale, poco sul pont. ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

32

 cresc. mp decresc. p

(pizz.)-----normale, poco sul pont. ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

37

 cresc. mp decresc. p

(pizz.)-----normale, poco sul pont. (p.s.p.) ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

41

 cresc. mp decresc. p sempre

Figure 9. Phase 1 of the second part of Section 1 of the piece, in which multiphonics sounds of unusual colours are produced (t.p.: touch pressure). Reprinted from *Si amanee, nos vamos* (pp. 2-3) by Rita Torres, 2015, Karlsruhe: the composer.

(pizz.)-----normale, p.s.p.----- sul pont. ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

47

 cresc. mp poco cresc. decresc. p

(pizz.)-----normale, p.s.p.----- sul pont. ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

52

 cresc. mp poco cresc. decresc. p

(pizz.)-----normale, p.s.p.----- sul pont. ----- pizz., ord.
 t.p.: dal niente ----- very light ----- al niente

56

 cresc. mp poco cresc. decresc. p sempre

Figure 10. Phase 2 of the second part of Section 1 of the piece, in which multiphonics sounds of unusual colours are produced (t.p.: touch pressure). Reprinted from *Si amanee, nos vamos* (p. 3) by Rita Torres, 2015, Karlsruhe: the composer.

normale sulla buca t.p.: extremely light

sul tasto

sul C. X mute string 6 on both sides of the finger

Lunga

p

pp sempre

Figure 11. Transition from Section 1 to Section 2 of the piece. Reprinted from *Si amanece, nos vamos* (p. 3) by Rita Torres, 2015, Karlsruhe: the composer.

$\bullet = ca. 40$ molto rall. a tempo

unmute strings 5 & 6 (keep others muted with right hand)

tap strings

marcato

sempre

f decresc. *mf*

a tempo molto rall.

muted strings

muted string 6 on both sides of the finger

sul C. X

simile

decresc. *p* sempre

a tempo accel. poco a poco

unmute string 6 progressively: while releasing the pressure, slide left hand to nut without noise

p sempre

decresc.

Figure 12. Section 2 of the piece (bars 66-69) and transition to its final section (bars 70-73). Reprinted from *Si amanece, nos vamos* (p. 4) by Rita Torres, 2015, Karlsruhe: the composer.

The pedal tone returns in the final section of the piece. Figure 13 depicts the score lines of this section; Audio Example 9 contains a recording of its performance. The pedal tone is now more resonant, as the string is only slightly damped on the nut, and its timbre is varied by slowly moving the excitation location towards the bridge while stopping briefly at some locations (bar 74).³⁰ When the hand reaches near the bridge, the finger that is damping the string starts moving towards the bridge (*glissando*) with *extremely light* pressure, thus playing continuously multiphonics (bars 75-76) – this is possibly the first time such an action is requested in a piece. The *glissando* ends at one of Section 1’s multiphonics locations, and the

³⁰ The excitation of the string’s v.ms. increases when the excitation location moves towards the v.ms.’ anti-nodes. Some partials are therefore emphasised during the movement.

tremolato ends with Gesture 1. This gesture is then used twice to recall two other multiphonics sounds of Section 1, and, in the very end of the piece, to produce for the first time the sound of the non-damped open string. This is preceded by a gesture that reminds bar 74 in fast motion.

The image shows two staves of musical notation for guitar. The first staff, starting at measure 74, is marked *tempo primo* and *string. a tempo*. It features a *Glissando* section with notes marked with string numbers (VI, V, IV, III, II, I) and fret numbers (14, 13, 12, 11, 10, 7). Dynamics include *pp cresc. poco a poco*, *f sempre*, and *poco decresc. < f*. The second staff, starting at measure 77, is marked *simile sempre* and *accel. sul tasto molto sul pont.*. It includes notes with string numbers (VIII, VII, VI, V, IV, III, II, I) and fret numbers (14, 13, 12, 11, 10, 7). Dynamics include *mf < f*, *pp molto cresc.*, and *poco decresc. < ff*. The score also includes performance instructions like *extremely slow movement of right hand, stopping ad lib.*, *at locations where the string's partials are more perceivable*, *t.p.: extremely light*, *tp.: very light*, and *tp.: extremely light*.

Figure 13. Final section of the piece. Reprinted from *Si amanee, nos vamos* (p. 4) by Rita Torres, 2015, Karlsruhe: the composer.

Conclusion

My research has introduced a new form of using multiphonics, which has contributed to narrow an existing gap concerning the variation in the beginning and/or end of the sounds. Relative to their conventional form of production (touch, pluck and let ring), this form presents variation in both. Moreover, it presents an innovative way of overcoming the short-sustain problem of the guitar and of playing multiphonics at the usual harmonics locations. *Si amanee, nos vamos* is the first piece to make use of that new form and is, possibly, the first to request multiphonics at usual harmonics locations, as well as a *glissando* of multiphonics.

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Exploring the Musical Identities of Children in a Collaborative Contemporary Composition Program in New York City

Leong Cheng Katy Ho¹

Abstract. This paper provides insight into a contemporary music program, specifically targeted toward young musicians. The main idea is to provide a space for those young musicians to explore the possibilities of collaborative contemporary composition. Collaborative composition is a fairly new idea in the field of music. As a part of *Face the Music* in New York City, a group of ten participants, ranging for 9-13 years old, gather every Sunday afternoon to experience and experiment with contemporary classical music as performers and composers. The participants have at least a few years of experience playing violin, cello, or piano. As an observer, I witnessed their organic music-making processes as a collaborative project. Limited parameters, suggestions, and help were provided by the mentors. The children had final say on suggestions, modifications, experiments, and invention. It was created with the idea that contemporary music can be invented, experimented, and co-created by young children. This study manifested the potential multifaceted musical identities of children who are involved in this program.

Keywords: Collaborative composition, children composers, musical identities, contemporary classical music.

Introduction

Contemporary classical music, referred to as contemporary music in this study, is still considered a marginalized art genre by the public. Although a growing number of pieces have been created by contemporary composers and the number of performances of contemporary works has increased in 2015 and 2016 (O'Bannon, 2015), only 12% of music in programs played by 89 orchestras throughout the United States is composed by living composers, and audiences still continue to show confusion or reluctance when hearing this genre. Some music directors of professional symphonies are also reluctant to program contemporary music because of an overall lack of public interest. For example, the New York Philharmonic essentially fits a contemporary piece in between more traditional and familiar pieces into their program, so audiences are more willing to accept it (Gilbert, 2015).

The area of research related to young musicians and contemporary music is even more like an academic desert. Music educators face many obstacles to introduce contemporary music to their students, such as enhancing the teachers' own musical literacy; understanding students' techniques, performance levels, musical preferences; and countering negative stereotypes of the genre. In fact, the study of contemporary music offers new ways of exploring music that taps into students' creativity and expression by utilizing new forms of notation, unusual tonality, different techniques for playing instruments, multimedia technologies, and/or

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unconventional methods of interpretation, and collaborative composition. Collaborative composition is a fairly new idea in the field of classical music. Typically, classical music is composed by only one composer. Collaborative composition can be found in popular music and other contemporary forms of non-classical music. There is a lack of research into collaborative composition in the current music and music education fields, and in contemporary classical music for young children is particularly rare.

Many of us grew up learning only the classical and romantic repertoire as a young instrumentalist. I also did not write any of my own music as I was always defined as the performer, not the composer. There were two main issues: 1) contemporary classical music is not taught to younger generations; 2) We see instrumentalists and composers as separate professions. Here come my questions: What if we start teaching younger generations to approach, listen, perform, and compose contemporary music? What are their experiences like? How will this experience shape their musical identities?

In research for these questions, I became aware of the *Face the Music*² program through my peers. *Face the Music* is an organization that provides music education to music students between the ages of 10 to 18, they mainly practice and perform living composers' music. The goal of *Face the Music* is to provide contemporary music learning opportunities for young musicians. They often work closely with living composers and study their post-genre music. I was astonished by the idea that this youth ensemble dedicated itself to playing only contemporary music. In this paper, I will focus on the *HarmonicsLab* in *Face the Music*, which is a program for young children to co-compose and perform contemporary music of their own and others. I will look at their musical identities through composition in a collaborative setting.

Music and Identity

Music is always consumed and used in different personal or social contexts. In an extensive study carried out by North, Hargreaves and Hargreaves, a total of 346 participants were involved in a series of surveys for 14 days about the uses of music in their everyday lives. The results show that a high proportion of music-listening episodes occurred in the presence of others but liking for music heard in isolation were higher than liking for music heard in the presence of others. The data also indicated that classical and jazz music were experienced infrequently. Music was experienced at leisure for the majority of participants. Furthermore, music listening was rarely the main task in which participants were engaged. They conclude that people consciously and actively use music in different interpersonal and social contexts to produce different psychological states. Musical experiences occur at different levels of engagement, and the value placed upon the music depends on the context (North et al., 2004: 75).

In addition to music that emerges in daily life, music is also a powerful tool for expression. According to Hudak (1999), it is

an emergent, radical engagement with consciousness; an engagement which can "rattle" the hegemony of everyday life and open up the possibility of a common ground where differences might meet, mingle, and engage one another (p. 447).

² Face the Music Official Website. (n.d.). Retrieved from <https://www.kaufmanmusiccenter.org/ftm/about-faqs/> (accessed on April 19, 2020).

The music-making process provides the, “formation of a musical ‘We’” (idem). Hudak believes that the very constitution of a, “We” creates the community of, “yearning,” similar to bell hooks’s (1990) ideology in which, “the shared space and feeling of yearning opens up the possibility of a common ground where differences might meet and engage one another” (p. 13). Further on, Hudak (1999) uses Schutz’s (1951) idea of the alignment of inner time to illustrate the relationship between the composer and the performers: The performers become the beholders of the tunes that align with the composer, which unifies them as being on the “same wavelength” (p. 453). Hudak (1999) asserts that music-making is a specific structure of temporality, connected with the constitution of what it means to be human. The formation of a sound identity embraces this modality of intimacy; without it, humans would be absent from social relations (p. 468).

It is almost impossible for me to find any musical identity research particularly dedicated to contemporary music; however, I did find research that focused on popular music and New Age music. Wang (2001) looks at a more specific group of people within the community, particularly, the Asian-American community. Wang (2001) examines popular music from the last forty years to explore the changing social, political, and cultural identities of Asian-Americans. He suggests that music has been an important and meaningful form of expressive culture that has helped to shape ethnic and personal identity (p. 440). Wang further asserts that there is a constant exchange of meaning between the creators of art and the consumers of arts (p. 462).

Boal-Palheiros and Hargreaves (2002) investigated the effects of interpersonal context of the New Age music on the emotional responses of children and early adolescents. Participants included 9- to 10-year-olds and 13- to 14-year-olds; half of the participants in each age group were randomly assigned to one of two listening conditions. The researchers employed instrumental new age music to evoke different emotional reactions with no lyrics involved. The excerpts were specially chosen for their unfamiliarity. Popular music was not used in the study so as to avoid hasty reactions of dislike or rejection. After listening to the excerpts, participants were asked to rate their listening experience on eight 5-point scales within four quadrants of emotional response: positive/negative affect and high/low arousal. The findings revealed that the participants’ emotional responses were polarized when they listened to music in groups rather than alone. This suggests that the group-related social functions of music were more distinctive than personal functions; this corresponded with developmental theories that emphasized the importance of peer-group relationships in adolescent social development (McGurk, 1992). Another result suggested that the younger children gave significantly higher mean ratings for positive/high arousal emotions, whereas the older children gave significantly higher mean ratings for negative emotions.

Method

The purpose of this ethnographic case study was to explore children’s experiences and perceptions of a collaborative composition program called *HarmonicsLab*. The participants in my study included both student participants, referred to as young musicians/children and teacher participants, referred to as coaches. The criteria were straightforward: all of these participants must have some involvement with *Face the Music*. Young musicians were chosen on a volunteer basis or by recommendation from the coaches; they ranged from 9 to 13 years of age, played different instruments at various skill levels, and have had disparate educational and musical experiences. Some were enrolled in public schools while others were students at private schools. I conducted semi-structured, one-on-one interviews and in conjunction with

ongoing casual conversations and dialogues with students and coaches before and after rehearsals. As a researcher, I observed the program from January 2018 to June 2018. Data were transcribed and analyzed for this study.

HarmonicsLab

As a part of *Face the Music* in New York City, a group of ten participants, ranging for 9-13 years old, gather every Sunday afternoon to experience and experiment with contemporary classical music as performers and composers. This facet of *Face the Music* is known as the *Harmonics Lab*, and it was created with the idea that contemporary music can be invented, experimented, and co-created by young musicians. The participants have at least a few years of experience playing violin, cello, or piano. As an observer, I witnessed their organic music-making processes as a collaborative project. Limited parameters, suggestions, and help were provided by the mentors. The children had final say on suggestions, modifications, experiments, and invention.

This group was created in Fall 2017 purely out of necessity. The coach, Whitney George³, informed me of a growing need for younger musicians with a variety of instrumentations to explore composition and contemporary performance. Whitney is a composer and conductor currently based in New York City. George's music, performance art, and installations have had both international and domestic premieres in England, Hong Kong, Austria, the Netherlands, and both coasts of the United States. Whitney said she used to teach a youth orchestra within *Face the Music*, but this year, there were multiple young pianists and a percussionist who expressed their interests in joining the ensemble. Within the group, many students also love to compose. The mixed-instrumental ensembles inspired them to launch *HarmonicsLab*. Ten participants gathered every Sunday afternoon to experience and experiment with contemporary classical music as performers and composers. The participants have at least a few years of experience playing violin, cello, piano, drum, or any other instruments. A coach and an assistant for this course facilitate rehearsals and guide the participants to compose.

Kitchen Concerto

It is an interesting idea that contemporary music can be taught to elementary and middle school-aged students without strong resistance. I was fascinated by the openness and creativity of the young musicians. Whitney guided these musicians to explore the sound of water. Some were playing on the piano to find the water sound they imagined, some were playing *glissandi* and *pizzicati* on the strings, and some were playing on the actual water—pouring it into a can to create a splashing sound. Things sometimes got a little messy, water was everywhere on the table, but all of them were very engaged in the process of making. Kanellopoulos (1999) describes children's engagement with music as a meaning-making process. During the process, Whitney asked many interesting questions to guide these group of middle school students. Questions such as, "What notes do you like?" "How do you want to arrange them?" "How do you want to play it?" "How can you make the piano to be percussive?" "How to create water-like sound on your instruments?" I noticed that students are intrigued by the process of creating. One commented, "I feel like a science class here." I

³ White George Official Website. (n.d.). Retrieved from <https://www.whitneygeorge.com/> (accessed on April 17, 2020).

noticed the creating process was messy, however, I believe the messiness is an essential part of co-composition.

After a few weeks of observation, Whitney finalized “Kitchen Concerto,” in which the young musicians in the lab co-composed and utilized various unconventional contemporary compositional techniques, incorporating the sounds of water, cans as percussion instruments, crumpling paper, whistling into a piano for reverberation, and pencils and forks as mallets. Extended techniques, such as harmonic *glissandi* on strings, striking the piano strings, and tapping on the instruments, were also incorporated by the composers. All of the participants also performed the “Kitchen Concerto, and one of them acted as the conductor for the performance. During one short interview, I asked them about their composition process.

Researcher: So how did you all come up with the piece?

Student A: We decided to do rhythms on our “instruments” from the kitchen.

Student B: Yes, we all brought our “instruments” from the kitchen.

Researcher: So did Whitney (the coach) provide you the theme?

Student A: Yes, and we were just like exploring...

Student C: We would improvise and went through the piece. Then we would talk about what we like and what we don’t like. And for the parts we don’t like, we will talk about how to deal with it.

Researcher: Like for the cellists, you did the *glissandi*, how did you come up with that?

Student D: I don’t think I came up with it, maybe we came up with it.

Student E: Remember we were doing the improv. in the group and we were playing around?

Student D: Oh yeah. I think we came up with it because we think it sounded like water. And we want to see how it sound on other instruments like violins and piano.

Researcher: How about the pizzacati?

Student A: Whitney (the coach) kinda gave us the baseline and we experimented it.⁴

⁴ This interview was conducted in March 2018.

Kitchen Concerto

HarmonicsLab
2018

[1st Complete Draft: February 25th 2018]

Freely
(♩ = ca 60)

60 seconds

Percussion I: move water between containers, con't until notated, if more than one player, enter and exit ad. lib.

Percussion II: move water between containers, con't until notated, if more than one player, enter and exit ad. lib.

Percussion III: move water between containers, con't until notated, if more than one player, enter and exit ad. lib.

Violin: pizz., p, con't until notated, if more than one player, enter and exit ad. lib.

Violoncello: p, mf, con't until notated, freely exploring natural harmonics on the C string notated if more than one player, enter and exit ad. lib.

Piano: inside of the piano, p, mf, con't until notated, freely exploring natural harmonics on the C string notated

2

60 seconds

Perc. I: con't until notated, if more than one player, enter and exit ad. lib, but play the ryth, together (tutti)

Perc. II: con't until notated, if more than one player, enter and exit ad. lib, but play the ryth, together (tutti)

Perc. III: con't until notated, if more than one player, enter and exit ad. lib, but play the ryth, together (tutti)

Vln: (pizz.), con't until notated, if more than one player, enter and exit ad. lib & div., by the end of page, if more than one player, begin to move to unison rhythm (tutti)

Vc.: con't until notated, pizz., p

Pno.: inside of the piano, p, mf, con't until notated, freely exploring natural harmonics on the C string notated

Figure 1. Musical Example. "Kitchen Concerto" Score. pp. 1-2, score provided by HarmonicsLab Coach Whitney George

It was interesting because the composition process was through a collaborative process over time, which all participants could input their voices into the piece. Undoubtedly, the coach, Whitney, had to provide guidelines, inspirations, and help for these young musicians. I was part of the audience of their performance. All of the young musicians have perfectly executed their parts from my point of view. It was not a random performance—they have rehearsed many times and they followed the score and one of the young musicians was acting as a conductor. They were playing on their parts which eventually developed, changed, and even switched with their friends. The style of this music reminded me of minimalistic music. The audience have emerged in the sound of water while they were performing their parts on the stage. The whole piece is about six minutes long.

Other Works

During my interview with the coach, Whitney, she walked through what they did and the idea of the group. She mentioned the idea of *compositional commentary*. The students in this group will usually learn a standard contemporary repertoire and then will re-create and co-compose a piece with the idea of commentaries. Whitney said,

*The first piece that we worked on was a Philip Glass re-working... We talked about it from the point of composition and then made our own compositional commentary by writing the reaction... So that is kind of our theme, taking a standard piece of repertoire and using it as a model for us to do a group composition.*⁵

The students at *HarmonicsLab* had also worked on other contemporary works that required minimal instrumental experiences but some contemporary performance techniques, such as the *Spoken Chorus Geographical Fugue* by Ernst Toch (1930) and *Panda Chant* by Meredith Monk (1984). These two pieces have similar methods of performance: both incorporate spoken words. The rhythms of both pieces are complex, but the young musicians in *HarmonicsLab* had a high ability to read music and incredible aural skills to rehearse and perform these two pieces. Both pieces required some assertive actions such as chanting loudly or projecting in outrageous voices. Sitting in the rehearsal also allowed me to notice their struggles. For instance, it was difficult to maintain a quiet classroom during the process of creation. The challenge of creating an “equal voice” was also present, as some students were less vocal than others during the co-composing process. Burnard (2002) also mentions the “leaderships” and “followers” roles in children’s group improvisation. It describes that during the process of improvisation among children, there are communicative gestures that emerge under the leadership of some students (Burnard, 2002: 167). A “leader” will usually emerge to lead the direction of the improvisation. In *HarmonicsLab* I have witnessed some students who have numerous ideas to contribute to the piece, acting as leaders, while others act as “followers.”

Wright and Kanellopoulos (2010) suggest that improvisation among children offers “an intimate, powerful, evolving dialogue between students’ identities as learners” (p. 71). I would further argue that these students at *HarmonicsLab* are also developing their identities as composers and musicians, not only as learners, as they improvise, compose, and perform their group composition. The above-mentioned authors also propose that autonomy, developing the self, and developing an open attitude towards children and their music are imperative for music teachers (Wright and Kanellopoulos, 2010: 81).

⁵ Idem.

It was uncommon for classes like *HarmonicsLab* to exist in public schooling. Hopkins (2013) revealed that many of the orchestra teachers support composition as a beneficial activity in an orchestra class, however, most of the teachers have never or rarely implemented composition in their classes. Luce (2001) supports that collaborative learning models of composing engage students in discussion, deliberation, and critical thinking which helps students to build personal relationships.

Discussions

Participants at the *HarmonicsLab* are musicians who play multi-genre music repertoire. Unlike most young musicians, who devote their time to the study of Bach, Mozart, Beethoven, or Tchaikovsky, learning from their sonatas, *études* and concerts, *Face the Music* musicians go beyond the traditional repertoire and further extends their experiences by playing and composing living composers' music. The democratic progress allowed these young musicians to explore their decisions as co-composers. The destruction of the traditional conservatory hierarchy provided an open space for these young musicians to grow through multiple musical identities.

I would argue that participants at *HarmonicsLab* are *flexible* musicians (Allsup, 2015) who are able to shift between musical languages and travel beyond the classical boundaries. "Flexible" musicians, based on Bennett (1983), are those who "master professional trait is the ability to use any and all forms of notation...with their ability to shift quickly and without prejudice between sources of musical information..." (p. 233). Unlike students at *HarmonicsLab*, traditional classical musicians are usually not taught to be "flexible." The inflexibility hinders many performers from improvisation to compositions. Bennett adds that, "as people who have gone beyond their own initial musical identities, they are in the best position to understand how to surpass the organizational and ideological obstacles that subordinate both classical and popular musicians" (idem). *HarmonicsLab* children are "flexible" musicians who are willing to take risk. Bennett ended his research saying, "all musical flowers and weeds will bloom, but the next hybrids will attract the most attention" (1983: 234). The hybrid nature also echoes within their multifaceted self.

One obvious finding for me as a researcher is the multiple identities that participants at *HarmonicsLab* possess. As all of them have composed, or they were involved in, some kind of composition project. The classical tradition of learning one primary instrument, and focusing only one skillset, is a concept of the past. Many researchers (Newton, 2005; Schopp, 2006; Norris, 2010; Menard, 2013) believe that many music activities mainly focus on the development of ensemble and individual performance, and do not always encourage creativity in students. Schopp (2006) criticizes the lack of experience in composing and improvising for high school music students. Although his study focuses on the jazz band, I believe there is a stronger need to focus on composing and improvising for strings musicians. It was apparent that the music education field was aware of the lack of flexibility and creativity inherited within traditional music education. However, the change is not noticeable in music pre-colleges or conservatories.

In *HarmonicsLab*, young musicians also co-compose together and perform their own compositions on the stage. They are encouraged to improvise on their primary instruments, secondary instruments, or non-traditional instruments to create and compose music. I remember in a class at Teachers College, we had an intense discussion on the legitimacy of

calling oneself a poet because you possess the ability to write a poem or *haiku*.⁶ During the class, many of the graduate students denied to recognize themselves as poets even having written poems in the past. They believed they would need to undergo professional training in order to be qualified as poets. Similar to whether or not you would call yourself a composer when you write music casually, these young musicians in *Face the Music* were confident in calling themselves, composers. To them, if they believe they are composers, they are composers. They can compose in any way, even yet unheard of ways. Hulse (2015) addresses the emerging, “globally-minded” composers today (p. 220), he believes contemporary composers do not need to come from the Western classical music canon. A global network of composers could come from any backgrounds, practices, or traditions. The notion that composers must be conservatory-trained is over, just as Hulse (2015) said. There were many different ways to compose with the assistance of technology. Many of the students were familiar with web-based notation system, some were even familiar with the professional notation software. Hulse asserts, “we need to cultivate musical-creative activity outside of academia, even as we resist the anti-creative intellectualism within” (2015: 232). He believes there is a responsibility for composers to engage the world with both the old and new.

Though the ability to improvise for young musicians varied in *HarmonicsLab*, Higgins and Mantie (2013) propose that improvisation is not only to promote creativity, but also ability, culture, and experience. They consider improvisation as an ability for overall musicianship, it is also a way to understand the culture and musical practices. Improvisation is also considered as a way of being in and through music. It is not merely a technical skill that creative musicians should possess, it provides a deeper experience for musicians.

There is a need to provide accessible musicking experience to integrate activities such as attending concerts, listening, performing, composing, and improvising (Small, 1999: 42). *HarmonicLabs* attempted to provide students with “expansive, playful, personal and interpersonal” experience (idem). I see the expansive programs in *Face the Music* from composing to performing, within small and large ensembles. The playfulness was revealed inside each quartet group as I witness friendship through their conversations and laughter. Their far-reaching performance opportunities also enable them to get to different part of the city and reaching to different audience. These experiences are providing these young musicians are more holistic music education.

Conclusions

A well-rounded music program today should focus not only advancing the skills and techniques on instrumental playing, but also promoting and cultivating the ideas of the individuality of “musician” as plural form rather than a singular term – a musician is a composer, a performer, and an improviser to the future generations who are facing the ever-changing 21st century. These young musicians at *HarmonicsLab* are ambassadors of multiplicities—they embrace their multiple identities as composers, performers, contemporary music performers, members of string quartets, and members of their community. For many of them, it made sense to possess different identities in the music world: “We are realizing how much the negotiation of identity today has to do with connectedness and membership” (Greene, 1991: 19). They understand there is a *need* for them to expand and emerge, whether it is for social benefit or advancing their musicianship.

⁶ Japanese poetic form.

In the end, they recognize themselves as composers and are more receptive towards contemporary classical music.

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