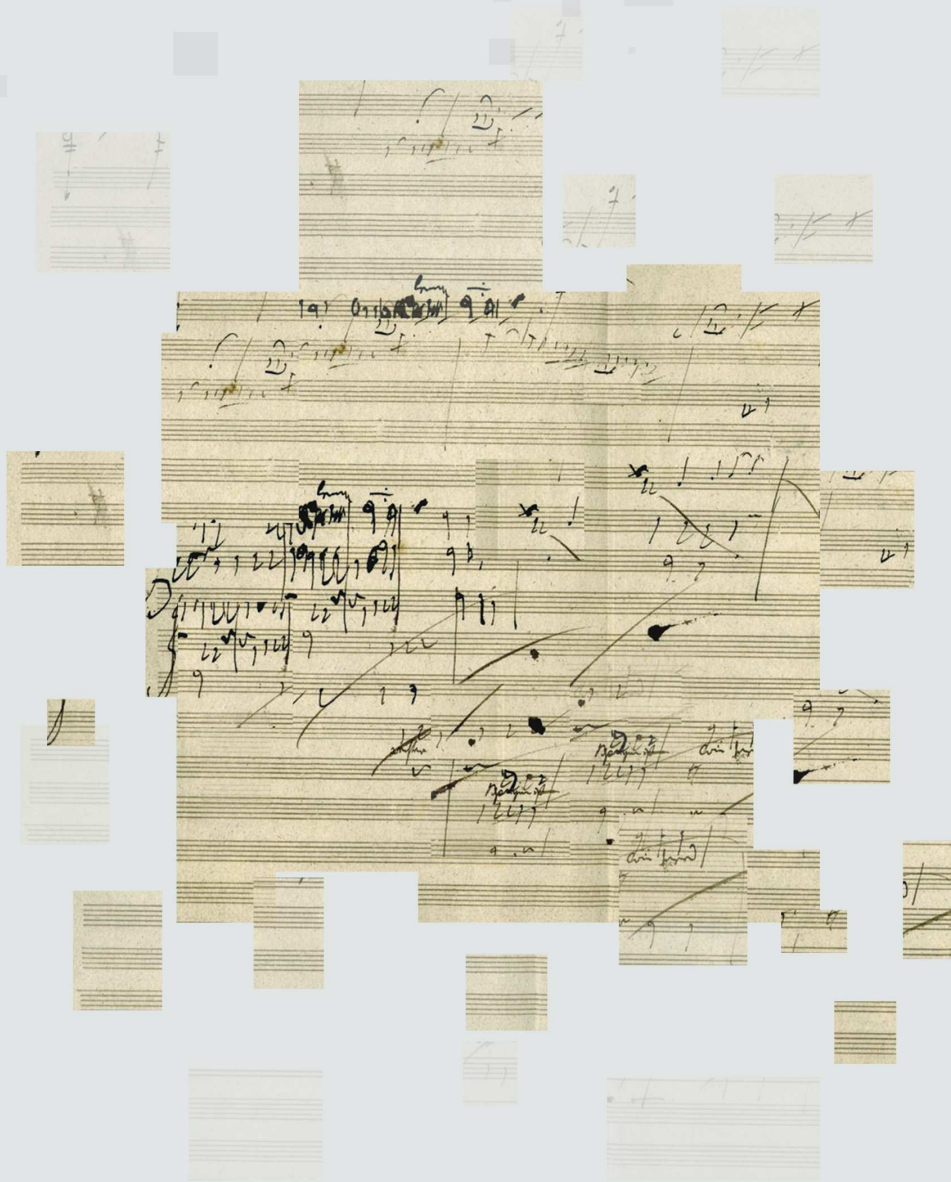


DEFRAGMENTING BEETHOVEN: SOUND APPROPRIATION AS BRIDGE BETWEEN CLASSICAL TRADITION AND ELECTROACOUSTIC MUSIC



By Juan Carlos Vasquez

A written companion for two artistic-based research products built upon the concept of appropriation as connecting bridge between music technology and the classical tradition of music composition.

**Defragmenting Beethoven: Sound Appropriation
as bridge between classical tradition and
electroacoustic music**

by

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Abstract

This thesis serves as a written companion for two artistic-based research products built upon the concept of appropriation as connecting bridge between music technology and the classical tradition of music composition. The first artistic work is a set of 9 pieces called "Collages Vol 2", a continuation of a first release meant to be an exploratory work for the present research. The second work is the sound interaction design, and the creation of two compositions for the Network of Intelligent Sound Agents, or "NOISA", built at the Sound and Physical Interaction Research Group from the Department of Media, Aalto University. After providing context and a short survey of influences on music appropriation, I made a comprehensive documentation of each of the pieces created for this thesis, describing form, content, compositional approach and sound processing in a systematic way.

I investigated on the diverse forms of appropriation as a technique for electroacoustic music composition. The most influential references for my work are documented in this written work: From the historical approach of appropriation to borrowing in music of the XX century and recent times; including a description of the first volume of my original Collages. Later on, I described my second collection of Collages and the utilisation of appropriation theories in the context of NOISA, a music interface for live performance. Finally, there is a section dedicated to a discussion featuring a commentary of a number of reviews of "Collages" preceding a closing segment with conclusions and further plans to expand this research in the future.

Keywords appropriation, electroacoustic music, acousmatic music, beethoven

Note 1:

Collages Vol. 2 can be downloaded from the following link:

www.jcvasquez.com/collages2.zip

Note 2:

This thesis was written in Sharelatex using a modified version of the template
"mitthesis," created at the Massachusetts Institute of Technology.

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Chapter 1

Introduction

The way we approach musical creation today has been inevitably redefined by the capabilities of the technological tools that we have at our disposal. Ever since Varèse repeatedly used the concept of *organised sound* [1] and Cage radically challenged the paradigms of sonic expression, there has been a debate regarding what can be called 'music composition' within a contemporary technological context [2]. This discussion evolves into a more complicated matter by considering the unprecedented use of 'sampling,' which poses the extra questions of originality, authenticity, and authorship of a piece in the modern digital era. While some question the purpose of re-imagining pieces of music by transforming them into something new using technology [3], others state that through history, the act of 'borrowing' in music enhances cultural links between periods of creation [4]. Appropriation in music has been extensively practiced, from literal quotes and direct variations to subtle allusions and decisions towards the structure [5].

This thesis serves as a written companion for two artistic-based research products built upon the concept of appropriation as a connecting bridge between music technology and the classical tradition of music composition. The first artistic work is a set of 9 pieces called *Collages Vol 2*¹, a continuation of a first release meant to be an exploratory work for the present research. The second work is applying appropriation into the sound interaction design and the creation of two compositions for the Network

¹ *Collages Vol 2* can be downloaded for free in the following link: www.jcvasquez.com/collages2.zip

of Intelligent Sound Agents (abbreviated to NOISA), built at the Sound and Physical Interaction Research Group from the Department of Media, Aalto University.

This written component is then, not an in-depth study of aesthetic premises regarding appropriation in art, but a synthesis of related work and references that served as layout for my own research. I also document the creation of the artistic output, describing the logical reasoning behind each of the two creative works resulting from the theories explained. However, as a composer, I am compelled to clarify that the pieces were conceived to stand by themselves. Therefore, this written document shall be considered as extended information rather than the technological justification of the aesthetic decisions taken.

In terms of labelling, I will adhere to Curtis Roads' strategy of using 'Electronic Music' to enclose a number of practices within the Music Technology field: "I needed one term, and I chose electronic music to refer to the general category of analog and digital technologies, concrete and synthetic sound sources, and systematic and intuitive composition strategies." [6]. In addition, I will use the label 'Electroacoustic Music' as an umbrella term that covers the expressions commonly known as elektronische Musik, acoustic music with live electronics, musique concrète, computer music, and acousmatic music. As these subdivisions carry a substantial number of well-defined characteristics, I will also talk specifically about them in occasions, clearly stating the context I am referring to. Finally, as acousmatic music is a seminal part of my project, is important to clarify that I will define it as proposed by Landy: "Acousmatic music is intended for loudspeaker listening and exists only in recorded tape form (tape, compact disk, computer storage)" [2]. In this particular case, and for practical reasons, I won't make a distinction between acousmatic music and tape music.

As the main topic of this thesis is appropriation in electroacoustic music -rather than in electronic music- this text does not cover the DJ Culture and other contemporary expressions featuring 'sampling,' including using quotations of classical music in contexts such as film music and electronic dance music. Even though the frontiers between the last mentioned practices and classical contemporary music can some-

times be uncertain, I will try as much as possible to refer exclusively to the impact of appropriation in electroacoustic music. To provide context, appropriation as a practice will also be examined in the classical music genre throughout time.

1.0.1 Motivation

The key motivation of my thesis departs from the fact that most of the research related to applying technology to music gives priority to technical aspects rather than aesthetic ones [2]. Roads recognises that, when it comes to technological advances, the "compositional application of these tools" [6] is a terrain largely unexplored. With the purpose of contributing to the research of compositional methodologies in electroacoustic music, I found that as early as in 1953, Boulez made a passionate chronological analysis on why to consider sound manipulation by electronic means as a natural "evolution" of composition in the tradition of western classical music [7]. Boulez presents as an argument the liberating possibility of choosing the sound material of a future piece not merely for ornamental reasons, but based primarily on the inner quality of structure that only electronically manipulated sounds can provide. According to Boulez, even at that time, the idea of having virtually no limitations in terms of pitch, timbre, intensity and duration presented an unprecedented opportunity for the composer.

However, in a much later article (1977), Boulez himself describes the current state of the relationship between technology and aesthetics as a dichotomy between tradition and innovation:

So we stand at the crossroads of two somewhat divergent paths: on the one hand, a conservative historicism, which, if it does not altogether block invention, clearly diminishes it by providing none of the new material it needs for expression, or indeed for regeneration. (...) On the other hand, we have a progressive technology whose force of expression and development are sidetracked into a proliferation of material means which may or may not be in accord with genuine musical thought, for this tends by nature to be independent, to the detriment of the overall cohesion of the

sound world.[8]

What was the reason of this apparent confrontation? It is relevant to consider that early experiments in electroacoustic music were pieces meant to exist just as a recordings due to technological limitations, as explained by Watkins [9] and Simms [5]. Both agree on why music existing only in the recorded medium lost impact: namely the lack of communal experience, a factor that with time proved less appealing to both composers and performers given the social nature of our species. A prominent strategy to cope with this problem include the irruption of schools of sound diffusion -led by loudspeaker orchestras such as the BEAST [10], *Acousmonium* and others [11]- and also the progressive availability of high-processing power to use digital sound manipulation in a real-time situation, embracing the communal experience through what we know as *live electronics*. In the case of acousmatic music, the idea of constructing an "ultimate performance" (the final recording that follows exactly the composers' desires), is still a highly appealing idea to me. While not talking about acousmatic music, some practitioners agree that achieving such a semi-utopian state is only possible by assuming the recording studio as the vehicle to obtain the perfect performance of a given piece [12], in addition to being a compositional tool [13]. For using a recording studio creatively is a prerequisite in gaining mastery in the art of audio mixing and mastering, leaving aside the fact that these crafts have been traditionally assigned to professionals of their fields, such as sound engineers. The traditional specialisation of functions -composer as creator and engineer as technician-[8] draw a clear separation between music technology and music composition both in practice and academia.

Cage said, "It is now possible for composers to make music directly, without the assistance of intermediary performers," [14] also foreseeing, without knowing, the arrival of personal computers powerful enough to allow acousmatic music composition from a regular bedroom. The composer in the digital age would be compelled to assume digital sound treatment in the same way a composer from the past would master orchestration. However, they are not contradictory skills. Both have one goal in common: obtaining the most effective and balanced overall sonority as possible.

Coming back to the disconnection between music technology and music composition, Victoria Newhouse offers a different view centering on architectural issues: most of the iconic concert halls around the world were built to provide acoustic settings appropriate for music from a certain time, more specifically repertoire from the 19th century [15]. It wasn't until the 19th century that it became widespread to build large concert halls in order to respond to the unprecedented demand of people interested in attending to live performances (both opera and instrumental music). Moreover, there seems to be a purely aesthetic dissonance when associating tradition and innovation in the same physical space: in a conversation with Newhouse, Daniel Barenboim says, "the classic shoebox has too many associations with the past."² Furthermore, Newhouse herself recognises how "difficult to imagine" would be having electroacoustic music in places such as the *Musikverein*. New music and new possibilities in musical interfaces evidently require new acoustic considerations. Fortunately enough, modular theaters and flexible options are becoming increasingly popular, due to the versatility to mould the space for the benefit of a wider array of music genres. It cannot be left unnoticed that creative use of space for music purposes could also be considered an appropriation of the past, as the ideas behind modular concert halls are inspired from 16th century models for live music proposed by Adrian Willaert and Andrea Gabrieli [18]. While this debate can be expanded much further, is not my desire to elaborate on a discussion based primarily on acoustics properties and physical spaces, as it would inevitably divert the research from the original idea of a compositional approach that aims to bridge tradition and innovation in electroacoustic music.

As many other music technologists, my initial practice consisted in the use of audio processes for digitally expanding existing sonic sources in ways impossible to achieve outside the technological domain. As a practical application, I released in early 2014 the first *Collages*. *Collages* is a series of experiments consisting of recording original performances of several works from the common practice period. I reinvent

²Barenboim refers to the architectural paradigm of a rectangular room typically with a raised platform in one end, known as a "shoebox". A famous example of a shoebox is the *Musikverein* in Vienna, defined by some as one of the best examples of acoustic conditions in a concert hall. [16, 17]

the pieces by digitally transforming sections of the pieces, and finally superimpose the processed fragments as a collage. I call this process "creating a post-modern electroacoustic version" of the original work. *Collages* has been exhibited, discussed, and premiered in a significant number of universities, academic events, and festivals around the world.

It became progressively clearer that *Collages* could in fact be an attempt of building a bridge between the electroacoustic practice and the classical tradition through the manipulation of music belonging to the common practice period. At this point, I investigated on the diverse forms of appropriation as a technique in music composition. The most influential references for my work are documented in section 2, from the historical approach of appropriation (2.1), borrowing in music of the XX century (2.2) and recent times (2.3); including a description of the first volume of my *Collages* (2.3.1). Section 3 documents my second collection of *Collages* (3.1) and the utilisation of these theories in the context of NOISA, a music interface for live performance (3.2). Afterwards, there is a section dedicated to a discussion (4), featuring a commentary of a number of reviews of *Collages* that contribute to the topic. The final section (5) contains the conclusions and future developments of the project.

Chapter 2

Sound Appropriation and Borrowing

2.1 Historical approach

Historically speaking, the term 'appropriation' has had multiple definitions. In the sphere of visual arts, one of the main reasons behind the 'art of borrowing' is paying tribute to direct aesthetic influences; "*artists tipping their hats to their art historical forebears*" [19]. In this context, the term appropriation brings up an aesthetic connection between ages through reinterpretation of a previously conceived artwork. Some relevant examples in art history can be found in Joan Miró's radical reimagining of 17th century Dutch masters [20], in Diego Velazquez's Pope Innocent X (reinvented into a hellish character by Francis Bacon), and in the multiple cubist-transformed *Las Meninas* by Picasso [21], which is directly modelled from the memorable painting with the same name by Diego Velazquez. Another prominent case is *Dido building Carthage* by J.M.W. Turner: this painting was donated to the British nation with the specific requirement of being held in the same room with Claude Llorain's *Landscape with the Marriage of Isaac and Rebecca* [22]. Even though almost a century separates the death and birth of these two painters, Turner's obsession with Llorain drove him to establish publicly and unequivocally establish his deep connection with an old master [23].

My personal take of applying appropriation in the sonic world is closer to what has been cataloged as 'borrowing' [4]. It is a widespread practice of reusing material in classical music, different to the more politically-oriented 'plunderphonics' [24] (which has a clear intention of being an statement against copyright).

Appropriation in classical music has been a notable element since medieval chant, where preexisting melodic lines constituted the starting point for new works. Similarly, the contrapuntal structure of polyphonic music from the Renaissance was also commonly originated from existing musical lines [5]. In the baroque era, Johann Sebastian Bach -one of the seminal figures of classical music history- was a very passionate eclectic, borrowing music from Vivaldi, Albinoni, Telemann, and Frescobaldi with significant success. [25]

However, in the 19 century, appropriation was less frequent [5]. The artist in general acquired a new status normally associated with gaining individuality by defying tradition [26]. By definition, this new position would leave aside the practice of borrowing music from other composers. Regardless, examples of appropriation can be found, such as the practice of using existing themes for a set of variations in a different compositional style. Two prominent examples are Brahms' *Variations on a Theme by Haydn, Op.56* and Beethoven's *Diabelli Variations Op. 120*. Peter K. Yu made a well-referenced list of some other examples from this time, including Beethoven's borrowing from Clementi and Cherubini, Schubert using music written by Beethoven and Mozart, and Mendelssohn's borrowings from Beethoven. The list goes on and on with composers from the entire common practice period: Handel, Haydn, Mozart, Wagner, Debussy, Mahler, and Rachmaninoff (to mention a few) also borrowed music from other sources [4]

2.2 Appropriation in the 20th Century

During the 20th century, appropriation has played a meaningful role in acoustic contemporary art music. Of all the common practice period composers, Beethoven seems to be the figure that the 20th century looked back most frequently: Cage's men-

tion that repeating Beethoven 50 times per second "will have not only a different pitch but a different sound quality" [14] was particularly significant, as it chooses Beethoven as the embodiment of the common practice period. In Cage's reflections, Beethoven is transformed into a sound source between a colour palette where noise and musical sounds represent the extremes. Mauricio Kagel's piece *Ludwig van*, written in 1969, represents one of the first historical attempts to create new music by transforming and overlapping sound sources from a single composer, also Beethoven. Other seminal figures have paid tribute to Beethoven by the means of appropriation, such as Strauss' *Metamorphosen* in 1947; Shostakovich's re-imagining of Beethoven's Moonlight sonata in his *Sonata for Viola and Piano* in 1975 and Stockhausen in his *Stockhoven-Beethausen*, or *Opus 1970*. Russian composer Alfred Schnittke -the archetypal example of 'poly-stylistics'- went as far as to compose *cadenzas* for Beethoven's Violin Concerto, quoting not only Beethoven, but also Brahms, Shostakovich, and Alban Berg's own concertos [27]. Another particularly notable case of music borrowing is Charles Ives, who also quotes Beethoven in each movement of his *Piano Sonata No. 2*. [28]

The practice of appropriation in the 20th century doesn't limit itself to borrowing just sound material: the movement known as Neoclassicism was born as a concept in decade of 1870, but is commonly associated with Stravinsky's interest of composing using music forms from the 18th century [29]. Furthermore, Watkins points out how "the eighteenth century was already a Neoclassic period, one that had witnessed the revival of interest of ancient Greece and Rome." [9]. In addition to borrowing formal ideas, writing for the traditional configuration of ensembles was also adopted with a novel optic in the 20th century: "The opinion has resurfaced that there were things that could best be said through an economical chamber group whose traditions encompassed an uninterrupted span of over 200 years and whose resilience to variable new modes of expression seemed almost limitless," [9] putting as an example the string quartets written by Penderecki, Crumb, Carter, Basset, and Britten, among other composers and pieces from divergent styles.

Perhaps the highest peak of contemporary classical music using appropriation as

main idea is the third movement of Berio's *Sinfonia* (1968). By quoting 18 composers from different periods, Berio effectively composed a masterpiece featuring a collage of music from different sources from the classical repertoire, meaningfully reorganised in a mosaic. Describing his piece as a "documentary on an *objet trouvé* recorded in the mind of the listener," [30] Berio demonstrated his mastery of the potential of appropriation as a cultural bridge between time and styles by blending all the different sources in a single, coherent new piece. In Berio we see a perfect example of the cultural meaning of quotation, explained in general terms by David Metzger:

"Borrowing then creates an unceasing interaction between the two sides, between both the original and the altered musical material, and the original and the new cultural associations. That interaction creates the thrill of hearing what happens when music takes on new life within music." [31]

2.3 Closing gaps in the digital age

From the many current attempts to approach music tradition from the digital domain, Aphex Twin's collaboration with Krzysztof Penderecki deserves a special consideration. While not a classical music composer himself, Aphex Twin -whose real name is Richard David James- has been arranged and performed by leading classical ensembles such as the London Sinfonietta, even making an appearance alongside Stockhausen, Cage and Steve Reich in the release *Warp Works & Twentieth Century Masters* [32]. In 2011, Aphex Twin was invited as part of the European Culture Congress in Wrocław to perform his appropriations of Penderecki's *Polymorphia* and *Threnody for the Victims of Hiroshima*, alongside the Polish composer himself. Aphex Twin radically transformed both works by editing fragments from previous recordings and constructing a multimedia performance, combining the sonic outcome with acoustic instruments (*Polymorphia*) or solely with video recordings of an orchestra performing live (*Threnody for the Victims of Hiroshima*). The program included unmodified pieces by Penderecki and other reworkings by Jonny Greenwood, the guitar player

from Radiohead [33]. Later that same year, Aphex Twin was part of a collective performing several pieces by Steve Reich, a group that included the American composer himself. [34]

Regarding quoting composers from the common practice period, Max Richter recomposed Vivaldi's *Four Seasons* with an extensive use of cyclical musical patterns. In an interview with the author, is evident his will to express a personal relationship with the original work through reimagining it in his own musical style. The frontiers between a remix, a reworking, or a completely different work get blurred, even for the composers themselves: "There is not a single answer", Richter responds when questioned about how he would categorise his creation. [35]

Appropriation from material belonging to popular culture has also taken place in tape music, such as James Tenney's *Collage 1* (1961), composed by playing back at different speeds and reorganising *Blue Suede Shoes* by Elvis Presley (originally by Carl Perkins). Brian Eno says: "Tenney took an everyday music and allowed us to hear it differently. At the same time, all that was inherently Elvis radically influenced our perception of Jim's piece." [13] Other theorists also acknowledge how recognising original material in an appropriated work powerfully impacts on the overall aesthetic experience. [36] Finally, within the electroacoustic music world, a notable work is *Frankenstein Symphony* by Francis Dhomont, made by putting together pieces from "morphological organs from the the works of 22 composers and friends." [37]

These examples show the increasing number of occasions where different aesthetic expressions separated by time or style (like Dhomont's example) blended together to produce a single artistic work. Those works are enhanced by the availability of the technological tools to push frontiers between tradition and innovation in a more adventurous way.

2.3.1 Precedent: *Collages*

The first *Collages* are 9 pieces I composed between 2012 and 2014, featuring digital manipulations of a single classical music piece. Today, it can be considered as my first practical application of music composition manipulating sound sources from the com-

mon practice period. However, this clear association was not strongly defined while composing the pieces. In fact, the starting point for the *Collages* series was inspired by Luigi Russolo's concerns in 1913 regarding the limitation of timbre achievable with contemporary acoustic instruments [38]:

"Musical sound is too restricted in the variety and the quality of its tones. The most complicated orchestra can be reduced to four or five categories of instruments with different sound tones (...) Music marks time in this small circle and vainly tries to create a new variety of tones. We must break at all cost from this restrictive circle of pure sounds and conquer the infinite variety of noise-sounds."

While Russolo considered noise as the next logical step for a wider palette of textural possibilities, I aimed to digitally expand the capabilities of acoustic instruments without the inclusion of external recordings. The procedure depended largely on dividing the sound source into layers, processing each layer individually, and ultimately assigning a unique range of frequencies for each them before beginning a superimposition process with the rest of the processed sounds. As every collage dealt with a single sound source from a classical composer, the final result allows the listener to appreciate tones, colours, and timbres from acoustic instruments impossible to hear without digital processing. At this stage, I was exploring replacing 'noise' with 'digital treatment' as the answer for Russolo's former theory for evolution in composition.

There are also existing artistic endeavours with similar premises as those present in my *Collages*. The title itself, which gives a clear indication of a superimposition methodology, is associated by Bailey [39] with the constant sensory overload imposed by postmodernity. The collage, also referred as audio-montage by Bailey, has served multiple goals in the second half of the 20th century: from political purposes or "insurrectionary elements in society" [39] to exploring the boundaries of sonic digital manipulation in James Tenney's *Collage 1*. Later on, Bailey interviews sound-activist Bob Ostertag, who advocates the usage of a single source to create sonic worlds of superimposed expansions of said sample. His work *Sooner or Later* (1991) is nearly hour-long piece composed from a small sample of a boy burying his father

during the Salvadoran Civil War. While my own *Collages* dissociate themselves from any political context, the challenge of achieving a complete piece by limiting the prime material to a single sound source was something I found highly appealing. In electroacoustic music, this would be the equivalent to the common practice-period's technique of thematic development or 'motivic through-composition' (*Motivführung*).

After being finished in 2014, the first set of *Collages* was published by the American label Important Records initially on tape, and later as a digital release. The final tracklist was as follows:

1. *Collage 1 (After M. Mussorgsky)* 02:44
2. *Collage 2 (After L.V. Beethoven)* 05:20
3. *Collage 3 (After E. Ysaÿe)* 09:18
4. *Collage 4 Landscape* 03:36
5. *Collage 5 - The Acrobat (After E. Satie)* 05:58
6. *Collage 6 (After J.S. Bach)* 07:47
7. *Collage 7 (After F. Chopin)* 11:13
8. *Collage 8 (After J.S. Bach)* 04:14
9. *Collage 9 (After J.L. Borges)* 02:06

Each piece has a mention of the composer from which it took the sound source and inspiration. In *Collage 1*, for example, I recorded myself performing a solo guitar arrangement of *The Bogatyr Gates (in the Capital in Kiev)* by Modest Mussorgsky, and used the recording as primer material for the piece. In the second work, I performed Beethoven's *Piano Sonata No. 21* (also known as the *Waldstein*), and later reinvented the result by deconstructing the piece and blending it into an entirely different work. Again, the main goal of these compositions was primarily to expand the usual guitar and piano timbres into composite textures that would cover the entire range of frequencies.

It is worth noting that there are two exceptions of using material from classical music composers: *Collage 4 'Landscape'* and *Collage 9 (After J.L. Borges)*. In the former, the timbre expansion method was applied to a local soundscape in Cali, Colombia, and in the latter to a recording of Chilean Nobel Prize recipient Jorge Luis

Borges. Even though there is no usage of classical music, the same compositional idea of single-source deconstruction was applied, obtaining aesthetic cohesion in the overall set of pieces. In the case of *Collage 4*, there is an extra application of classical music composition methods: the structure complies with a 5-voice canon made with delayed starting points of the recording, with pitch-shifting transposition for each 'voice'.

Many of the digital techniques use random automation in many parameters. Therefore, each time the track was exported a different result was created. I selected the final recordings after listening to nearly one hundred versions of each of the pieces.¹ This procedure reflected Russolo's view of an aleatory symphony that is created from everyday noises, always moulded by the influence of the machine in an industrialized -and nowadays digital- civilization. Even though my results in terms of style by that point were far from Russolo's view, his views still persisted in my work in the form of broad conceptual guidelines.

¹The first Collages series have been performed extensively throughout Europe, Asia, America and Oceania -28 concerts in 11 countries just during the release year, including hour-long specials by leading radio art / electroacoustic music radio stations, such as Resonance 104.4 FM (Clearspot - UK), BCB Radio 106.6FM (The Sound Art Show - UK), Basic.FM (UK), Radio Circulo (UNDAE - Spain) and CKCU FM (Acoustic Frontiers, Canada). Some other spaces supporting the diffusion of this work during the release year included the University of Kent (Symposium of Acoustic Ecology), Wesleyan University (Society of Electro-Acoustic Music in the United States 2014 National Conference), the ICMC-SMC 2014 joint conference, The New York Public Library (Kinokophonography), Leeds College of Music (International Festival for Artistic Innovation), Queen's University Belfast (Sonorities 2014), Florida International University (New Music Miami ISCM Festival), New York City Electroacoustic Music Festival, Deep Listening Institute and the Electronic Language International Festival (FILE - Brazil)

Chapter 3

Practical application: artistic projects

The practical applications included in this chapter are two projects newly created for this thesis. After publishing *Collages* in 2015 -and coinciding with my start of activities at Aalto University- I started composing a new series of pieces following the same concept, but built upon the experiences gathered through the performances and reviews of the first collection of compositions. The now finished *Collages Vol. 2* constitute the first project composed for this research.

Amidst the composition process of this second series of *collages*, I joined the Sound and Physical Interaction Research Group (SOPI) at Aalto University, in which I served as a composer and sound interaction designer. While developing the custom *Network of Intelligent Sonic Agents* (abbreviated to NOISA), we found a way to integrate the same theories of appropriation into an interactive instrument. The second and final contribution in this thesis are my sound interaction implementations for NOISA, focused in a live situation context.

3.1 *Collages Vol. 2*

*Collages Vol. 2*¹ is the first of two practice-based products of my thesis research at Aalto University. The main purpose of *Collages Vol. 2* is to continue the same aesthetic premise of the previous release, with some divergences in the compositional approach. The main aspect in which both volumes differ is a conscious use of the structure, from an intuitive organisation (in the original *Collages*) to a planned development (as occurs in *Collages Vol. 2*). The experimental nature of how the pieces were conceived in the first *Collages* had a clear line of prioritising sound before structure, i.e. relegating the overall division of musical sections to a secondary degree. This practice is common in electroacoustic music, particularly in acousmatic music. Acousmatic music -a category to which both series of *Collages* belong- has a direct historical connection to Pierre Schaeffer's experiments at the Groupe de Recherches Musicales (GRM), from where, as is known, *musique concrète* comes from. Schaeffer adopted a particular paradigm to compose music: in his pieces, the sound preceded the structure in opposition to the traditional strategy of following a preconceived plan of organisation, a.k.a. structure, in which the sound would eventually find accommodation [40].

However, precedents of this paradigm of composition can be found even earlier, in the equally pioneering work of french composer Edgar Varèse. In relation to *Hyperprism* (1922): "Musical coherence is not derived primarily from such traditional procedures as thematic-motivic development and linear progression but from the development of (...) textural entities." [41] In contrast, *Collages Vol. 2* still considers textural organisation paramount for defining musical hierarchies; it involved a previously predefined number of pieces, content, and -more importantly- structure before initiating the proper compositional process. This plan was a conscious choice to expand the application of appropriation from the sound material, a.k.a. sound sources, to appropriation of the compositional planning seen in music from the common practice period.

¹*Collages Vol. 2* can be downloaded for free at the following link: www.jcvasquez.com/collages2.zip

Collages Vol. 2 is also constituted by a collection of nine pieces following the same principle of radical transformations and reorganisations of a single sound source. The whole series was created using Ableton Live as a Digital Audio Workstation. As this artistic work is the continuation of the first volume of *Collages*, the numbering starts from # 10, *Sibelius Collage*. In this order of ideas, the pieces comprising *Collages Vol. 2* are:

1. *Collage 10, "Sibelius Collage"* - made by transforming *Romance, Op. 24 No. 9* by Jean Sibelius (Finland)
2. *Collage 11, "Albeniz Collage"* - made by transforming *Granada* by Isaac Albeniz (Spain)
3. *Collage 12, "Beethoven Collage"* - made by transforming *Sonata No. 8, Op. 13* by Ludwig Van Beethoven (Germany)
4. *Collage 13, "Ysaÿe Collage"* - made by transforming *Sonata for Solo Cello, Op. 28* by Eugène Ysaÿe (Belgium)
5. *Collage 14, "Debussy Collage"* - made by transforming *L'isle Joyeuse* by Claude Debussy (France)
6. *Collage 15, "Rachmaninoff Collage"* - made by transforming *Étude-tableaux, Op. 33 No. 5* by Sergei Rachmaninoff (Russia)
7. *Collage 16, "Dvořák Collage"* - made by transforming *Serenade for Strings, Op. 22 (Tempo di Valse)* by Antonín Dvořák (Czech Republic)
8. *Collage 17, "Colombian Collage"* - Field recording of Colombia, as a manner of 'self-portrait'
9. *Collage 18, "Neruda Collage"* - Chilean Nobel Prize recipient Pablo Neruda's voice, reading his own poems

3.1.1 *Collage 10, "Sibelius Collage"*

The first one of the series, *Sibelius Collage*, is an electroacoustic rendition of Jean Sibelius' *Romance, Op. 24 No. 9* for the official 150th anniversary of Jean Sibelius' birth.² Having such a context to create a piece based on a classical music composer was a definitive point for setting up the direction on what the *Collages* series would be from that moment on. The historical importance of both the place where it was composed -the Finnish National Gallery- and the event -Sibelius' birth anniversary- imposed a special challenge of seeing tradition through the eyes of sound new media, while being particularly careful as a foreigner of not stepping on any sensible fibers regarding the extraordinary transcendence that Jean Sibelius has for Finland's identity as a nation. For *Sibelius Collage*, I decided to keep the same duration (around 3:14), the same structure (a ternary form, A-B-A'), the same musical content, an even the same expressive curve (introduction-conflict-climactic resolution) as the original *Romance, Op. 24 No. 9*. The audio processes used were predominantly quasi-synchronous granular synthesis generated with the Max for Live external "Granulator II" in Ableton Live [42], and the audio stretching algorithm invented by Paul Nasca [43] (used offline). *Sibelius Collage* was composed entirely at the Ateneum Museum (the Finnish National Gallery) using a mobile gear setup comprised solely of a laptop, an audio interface, and a small midi key controller. "Sibhack" was a highly unusual invitation to 'hack' Sibelius from any point of view, not only musically speaking: the event involved the extra challenge of obtaining a finalised product with the few elements that the invited artists could bring to the museum by themselves. *Sibelius Collage* was made by overlapping 15 layers of differently-processed piano fragments. The running time is 4:06 minutes.

²The creation of this piece was overseen by the The Sibelius Birth Town Foundation, the Ateneum Museum (Finnish National Gallery), and the software company Eficode during an event named "Sibhack". The main premise consisted in 'hacking' Sibelius, allowing the use of any type of media to fulfill that purpose. *Sibelius Collage* was premiered in the Ateneum's auditorium in October 2014. Later on it received the American premiere in June 2016 during the New York City Electroacoustic Music Festival.

3.1.2 *Collage 11, "Albeniz Collage"*

*Collage 11, "Albeniz Collage"*³ was made using an original recording of *Granada, Suite Española No.1, Op.47*, in its solo guitar version. This piece, made with a free structure of overlapping sections -or a mosaic⁴- is comprised by two contrasting themes: The first one extracted from the melodic opening theme of the piece, and the second from the natural noises produced by the guitar when the hands move along the fretboard. The main audio processing device used is the "Buffer Shuffler 2.0," included as part of the basic package of Max for Live, in Ableton Live. The stutter effects at different speeds in combination with multi-band distortion create a composite texture of particular prominence. In addition, there is an alternation with unmodified quotes from the original piece. *Collage 11* is composed of 11 layers, each one equalised to force the sonic content in a range of frequencies unoccupied by any other layer. The running time for this piece is 3:21 minutes.

3.1.3 *Collage 12, "Beethoven Collage"*

Collage 12 uses a theme and variations form in an electroacoustic music context. It takes a fragment of *Sonata No. 8 Op. 13* (first movement) by Beethoven, and transforms it sequentially with a different main audio processing technique in each repetition. A total of 5 variations constitute this piece: the first variation applies spectral stretching and gliding between partials, using the "Soundmagic Spectral Plugin Suite" by Michael Norris [45]. The second variation features a tape delay pedal emulator, with sufficiently long feedback level in order to generate a drone-like texture for two minutes. The third variation was elaborated with several audio anomalies characteristic in glitches, such as stutters, tape stops, bit distortion, and

³*Albeniz Collage* was awarded an Honourable Mention in the Category "Excellence in Art, Design, and the Production of Sound" by "Klingt gut" Symposium in Sound Organization Committee, the AES Hamburg Student Section, and the President of the Audio Engineering Society. *Collage 11* received its premiere during "Klingt gut!" Symposium in Sound, an event organised by the Faculty of Design, Media and Information of Hamburg University of Applied Sciences in Germany, in which I was also invited to share the framework in which it was composed

⁴Mosaic, or 'moment form' conceptualised by Kramer as a collection of moments, where each moment is defined as a "self-contained (quasi-)independent section, set off from other sections by discontinuities"[44]

gates. The fourth variation takes inspiration in the spectral atmospheric beds heard in the initial section, including an extra filterbank applied directly to the Beethoven's fragment. The fifth and final variation superimposes three processed layers of granular streams and low-frequency oscillators running simultaneously. *Collage 12* is 7:06 minutes long.

3.1.4 *Collage 13, "Ysaÿe Collage"*

*Collage 13, "Ysaÿe Collage"*⁵ can also be described formally as a mosaic, divided into two main sections: the first section being a presentation, followed by a canonical development transposing each voice to form a ninth chord. The main element of audio transformation in *Collage 13* is pitch shifting, overlapping layers transposed from -20 to +10 semitones. A band-pass filter was applied to each layer, with frequency and bandwidth parameters dependant on the range of frequencies with the most energy after the pitch transposition. The only external device used was "Guitar Rig 5" [46], a multi-effects processor designed by the company Native Instruments. While commonly used in electric guitars, I found that effective results can be obtained when Guitar Rig is applied to a cello. In the case of *Collage 13*, I used Guitar Rig to process signals in different ways: using gates controlled by a step-sequencer, emulating guitar cabinets through audio impulses, and applying guitar tape echos and ring modulation effects. *Collage 13* is comprised by 11 layers of differently-processed sounds, and has a duration of 5:20 minutes.

3.1.5 *Collage 14, "Debussy Collage"*

Collage 14 was organised into a classical form. The structure is the same as a rondo in its simple form (A-B-A-C-A'), with "A" fulfilling functions as the ritornello. As normally happens in a rondo, there is a contrasting character, both in the speed of attacks and overall intensity for each one of the sections. The ritornello (A) was mainly made by importing and processing the Debussy piece into "Izotope Iris 2" [47],

⁵"Ysaÿe Collage" was premiered in "Sonorities 2016," Belfast's longest-running festival of contemporary music

a sample-based synthesizer with spectral filter capabilities. In addition, fragments of the original piano recording transposed -34 and -48 semitones occur in intervals, forming a slow-paced, meta-rhythmical pattern. In contrast, section B features an overall chaotic sonority using mainly the SoundScratcher device from ixiQuarks [48] in combination with layers stretched to 24 times their duration produced using Paul Nasca's algorithm.

Finally, Section C is predominated by a reversed low-pitched layer in combination with a different iteration of spectral filtering extracted from Iris 2. At a determined moment, the ritornello is introduced again (A') with much quieter dynamics, overlapping with the material contained in C. Both sections gradually fade out into silence. *Debussy Collage* is the longest and most complex piece of this set, totalling 22 different layers. *Collage 14* is 7:29 minutes long.

3.1.6 *Collage 15, "Rachmaninoff Collage"*

Collage 15 preserves the same form and expressive curve as its source, *Étude-tableaux, Op. 33 No. 5* by Sergei Rachmaninoff. Both pieces are structured in a ternary A-B-A' form. In terms of character, the opening segment presents and develop a theme with strong rhythmical features. The middle section features a contrast in tone, with an overall darker and chromatically complex sonority. At last, the closing segment hosts the climactic moment of the piece.

The tool for audio processing was a phase-vocoder patch in Max 7 used to stretch the piece to 5 times the original length without affecting the overall pitch. To achieve this, I designed an algorithm using the external object `vb.stretch`, designed for Max by Volker Böhm [49]. This object also allows one to replicate the stretched signal into 6 copies, making it possible to apply an independent pitch shifting value to each of them. In *Collage 15*, there is a gradual harmonic expansion of the stretched sound material, ultimately building up towards a climax in the closing section.

3.1.7 *Collage 16, "Dvořák Collage"*

Collage 16 is a single-section piece, featuring a composite texture created by overlapping multiple performances of the *Tempo di Valse* movement from the *Serenade for Strings, Op. 22* by Antonín Dvořák. The audio processing in *Collage 16* is inspired by the standalone application "Sonic Texturizer," by Michael Norris. According to Norris, Sonic Texturizer "creates stochastic massed textures from multiple independent, de-synchronized versions of a single sound file." [50] After drawing a plan for the piece using Sonic Texturizer, I decided to create similar results manually in Ableton Live, using a combination of quasi-synchronous granular synthesis and displaced audio files.

Collage 16 is the only piece in the entire series of Collages using a recording of a full symphonic orchestra. Given the rich timbral complexity of the orchestra in its original form, I didn't see it necessary to use any significant sound processes other than mild filtering and superimposition of the original file with different playback positions. *Collage 16* is comprised by 22 layers of the original piece, and is 4:46 minutes long.

3.1.8 *Collage 17, "Colombian Collage"*

Colombian Collage takes distance from the use of appropriation exhibited thus far, as it doesn't use any source material extracted from the common practice period. There is an explanation for this: for the first volume of *Collages*, the promotional material included the phrase "Digital Sonic Portraits of Beethoven, Bach, Ysaÿe, Satie, and More." [51] As most pieces dealt with a single classical composer, describing the pieces as portraits was indeed accurate. In a similar vein of thought, for this second volume I decided to also include a self-portrait. For achieving that, I had two immediate options. Either I could compose a new piece of acoustic music to be deconstructed and superimposed into an acousmatic work (a self-appropriation), or I could transform one of the existing collages (a re-appropriation). The former might seem to deviate from the original purpose of borrowing preexisting work and giving it a personal

identity, as the original material would be already written by myself. The second option would pose an even bigger challenge: how could this self-portrait differentiate in aesthetic terms from any other collage?

As an alternative solution, I decided to compose this collage by processing field recordings with a meaningful personal backstory. It is a similar approach with the piece *Collage 4 "Landscape"* of the first volume of *Collages*, which uses a single field recording from a park in Cali, Colombia. In my hometown of Cali, particularly omnipresent street music has had a tremendous impact on identity individually and collectively. [52] *Colombian Collage* is therefore an appropriation of a music-driven soundscape rather than a reinterpretation of a classical music piece.

3.1.9 *Collage 18, "Neruda Collage"*

Collage 18 is also an exception to the approach of appropriation used up until this point. *Collage 18* features the seed for a future expansion of my research on appropriation in electroacoustic music, advancing from reusing classical music sources into appropriating methodologies of composition (a musical canon), as well as concepts of orchestration translated into complementary band-pass filtering. The implications of expanding the concept of appropriation will be treated in more detail in the conclusions of the present thesis.

In detail, *Collage 18* is a 14-voice spectral-spatial canon using as a theme the poem *Américas*, written by the Nobel Prize winner Pablo Neruda and read in his own voice. Instead of assigning a new pitch for each voice's entry, each corresponding voice occupies a different spectral frequency band (for the first 8 voices) and a symmetrical distribution in space in its full range version (from voice 9 onwards). The composite texture and rhythm evolves as the declamation tone increases in intensity. *Collage 18* has a running time of 6:18 minutes.

3.2 NOISA

The second practical project developed for this thesis is a new development for an interface for musical expression: the Network of Intelligent Sonic Agents (NOISA) [53]. My work with NOISA consisted of integrating the concept of appropriation translated, into a live performance context.

NOISA is an interactive music system designed to monitor the performer's engagement and provide autonomous supporting counteractions to maintain it. This is achieved by proposing musically-interesting events when the performer is losing interest or motivation. NOISA functions in three different stages: (1) monitoring system for physical characteristics, (2) engagement prediction, and (3) response model. The first stage is done by tracking eight different indicators related to movements, facial expressions, and actions, all measured with a Microsoft Kinect 2. The second phase (engagement prediction) is based on the previously developed subjective engagement sampling method (SESM) [54, 53], which operates by estimating a person's engagement in real-time using the monitored physical indicators. The third and last phase, a.k.a. the response model, uses the predicted engagement as an input. It produces desired support based on the principle of complementarity, making the responses specially tailored for that particular musical interaction.

The physical interface of NOISA consists of three black boxes with two white sliders, also referred to in this work as 'handlers'. These boxes and handlers comprise the instruments. Additionally, there is a central computer and an infrared camera. The interface is operated by moving the handlers up and down, creating and manipulating sound textures obtained by digitally processing small sound fragments of music from the common practice period.

During 2015, we designed a new iteration of NOISA featuring active deterministic behaviour: when the player is not engaged, the system stimulates further attentive creativity by retrieving related recorded gestures. In contrast, NOISA produces only occasional responses once the performer is deeply engaged.⁶ My contribution for

⁶A complete description of this new version of NOISA, including a formative study, was shared by our research team in the International Conference on New Interfaces for Musical Expression NIME

this new development of NOISA was the redesign of the sonic interaction involving appropriation of sound material, as well as the composition of two pieces by reusing a pre-existing compositional methodology.

3.2.1 Appropriation applied to an interactive system

As in *Collages*, NOISA processes fragments from the common practice period. To facilitate satisfactory results in a live situation, I designed a multilayered sonic output generated from the simple up-and-down possibility of movement. The sources were segments extracted from the following pieces: Modest Mussorgsky's *Pictures of an Exhibition* (transcribed for solo guitar), Johann Sebastian Bach's *Partita in A minor, BWV 1013* for solo flute, and Ludwig Van Beethoven's *Piano Sonata No. 21, Op. 53*.

One of the challenges of the multilayered sonic interaction was obtaining a balanced texture in all frequencies of the audible spectrum. The reason for potential frequency masking relies on the complexity of each individual instrument's sonic output. To avoid this issue, a different frequency region was assigned to each instrument, ranging from low to high frequency content. This generated strong spectral content roles (and therefore balance) once the three instruments were emitting sound at the same time. The autonomous responses also follow a principle of complementarity, maintaining the overall spectral equity throughout time. The aim of spectral balance is analogous to the mixing priorities followed when superimposing layers during the composition of *Collages Vol. 2*.

The sound interaction inside the agents is based on a sample-based granular synthesis module made in Pure Data. The left slider, a.k.a. the sound producer, modifies the playback speed of every individual grain inside the granular patch. At the same time, it controls proportionally the wet/dry level of a reverberation effect. On the other hand, the right handler can manipulate the produced signal by changing the values of a tape head rotation frequency emulator for an analog-like pitch-shifting effect. The transposition of tones, however, is applied to a duplicate of the original

2016 at Griffith University (Brisbane, Australia). [55]

signal, creating incremental micro-tonal variable interactions in relationship to an harmonic pedal (the original signal).

The physicality of the instrument and acoustic properties of the exterior material were taken into account when developing the interaction. The result of this consideration shaped the final envelope behaviour: as the handlers approach the box, sharp and shorter attacks were designed. In contrast, achieving the maximum top position generates an evolving and rich sustained texture for an indefinite period of time. For finishing the piece, we implemented a turn-off feature for each instrument by setting both handlers in minimum position, i.e. silence. Once this is done, any automatic responses are avoided for the specific instrument in which the 'off' gesture was performed.

3.2.2 Expanding the repertoire

To validate NOISA as a live instrument, we acknowledged the importance of building new repertoire corresponding to the development of a new music interface [56]. To achieve this, we decided to expand the concept of appropriation from the sound sources (i.e. samples of classical music) into a methodology of composition (motivic through-composition technique). This procedure involved composing two *études* (also a typical form of the common practice period), created under the premise of feeding the NOISA system with brief musical *motifs*.⁷

We notated the compositions using graphic boxes over a timeline, indicating the position of each slider over time. Although our approach to notation might show similarities with *Studie I* (1953) by Karlheinz Stockhausen, a more direct comparison can be made by analysing the live electronics part in *Mikrophonie I* (1964). In addition to microphones, Stockhausen designed the latter piece to be performed by operators and percussionists and a person dedicated to manipulating a series of filters and potentiometers. Stockhausen developed a system of a visual line denoting ap-

⁷A brief overview of both pieces can be found in our paper "Motivic Through-Composition Applied to a Network of Intelligent Agents" written for the International Computer Music Conference (ICMC) 2016 in Utrecht, Netherlands. [57]

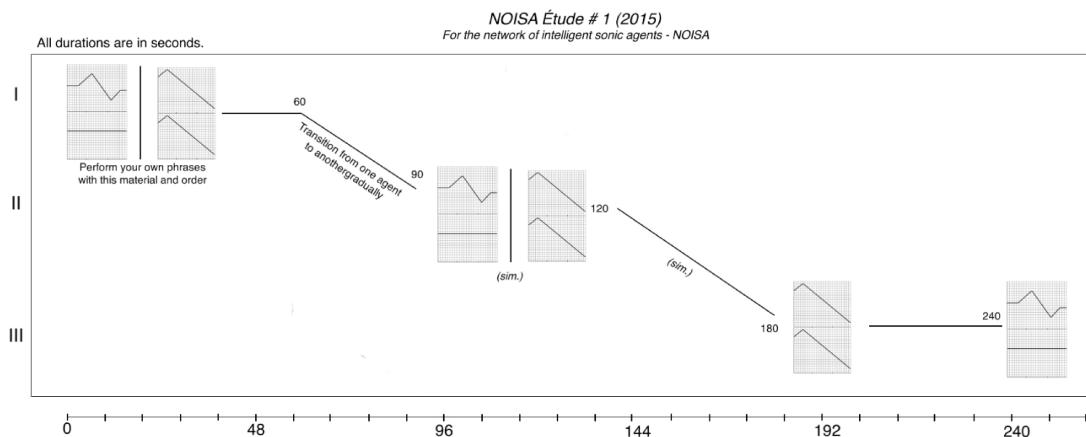


Figure 3-1: First page of the score for the *NOISA Étude #1*. The player is asked to compose previous phrases with the material given, then follow a timeline of events. During the transitions, the instruments involved can be played simultaneously.

proximate position moving throughout time, anticipating the evident difficulties for a performer to reach exact values at a considerable speed. In this way, it is possible to keep synchronisation at the same time with the rest of the performers.

NOISA Étude #1

NOISA Étude #1 was composed using two different 4-second motifs that interrelate and develop throughout the piece. The first motif has a strong rhythmic and melodic structure, and it requires to the performer to maintain the pitch relationship as accurately as possible with the notated gesture. The second motif, in contrast, is essentially a downward movement identical in both sliders. This gives it a textural quality rather than stating particular pitch content. As the piece uses non-standard notation, it encourages the performer to spend a certain amount of time getting familiar with the motifs. This is also necessary due to the structure of the piece, in which there is freedom to develop one's own motivic variations within the given times and orders. The first section of the score can be found in Figure 3-1 and a video of *NOISA Étude #1*, is available at <https://vimeo.com/131071604>

This piece is structured in a ternary form: A-B-A'. The first section, approximately 4 minutes long, features a systematic feeding process to each agent (i.e. instrument

interface) with variations of the original motifs. Transition between each one of the agents must be done progressively and smoothly. Once this section is over, the system will have analysed and stored enough material to provide meaningful counteractions based on the variations performed. In the second section, the performer is asked to follow courses of action depending on whether or not the system is responding. In the case that the system does not respond, the performer has to respond with a variation of the retrieved gesture. The composition ends by asking the performer to operate Agent 1 with small fragments of the first motif and respond with increasingly shorter reactions to the gestures retrieved by the system. The ending of the piece is marked by a silence of automatic responses longer than 10 seconds.

NOISA Étude #2

For the piece *NOISA Étude #2* I designed a new sound interaction using spectrum-complementary time stretching processes designed with phase vocoders. The evolution of the motifs is therefore based on the motivic variations of augmentation and diminution, literally applied in a music technology context through time stretching. *Étude 2* was modelled to fit a binary form (A-B) without any repetition of sections. In the first section, the system is fed with variations of a short fixed musical motif with strict rhythm, encouraging the response module to recognise elements of the musical phrases and create its own set of variations. The second and final section elaborates on the concept of augmentation with the aim of creating a composite, steady texture. Additionally, the system is meant to respond with the data retrieved from the first section.

The score uses a similar notation language to the first *étude* (see Figure 3-2), indicating both sliders' position in time measured in seconds. However, *Étude #2* displays a much stricter structure: rather than providing freedom to develop *motifs* in an improvisatory way, each action is fully notated and linked to a specific moment of the piece.

In terms of sound design, the Pure Data patch takes a sound and performs an analysis for channel magnitude and phase precession in each channel. Afterwards,

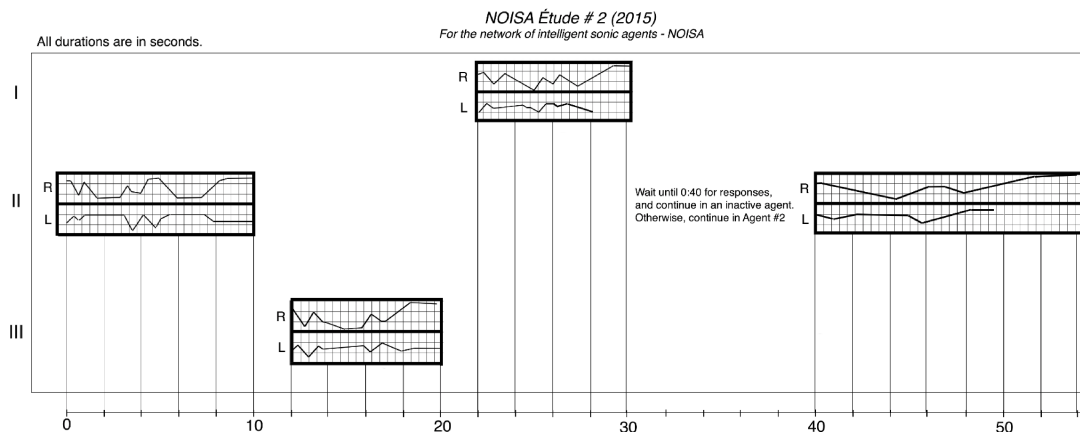


Figure 3-2: First page of the score of *NOISA Étude #2*. Durations and actions are notated in detail, while spaces without activity are silences.

compares it with another overlapping window out of the recorded sample, 1/4 ahead of the original. The window size is always the same: 4096 samples. There is a parameter 'location', which determines the midpoint of the prime window, and there is a parameter 'speed' that loops to the playback location according to its value. For this piece, the right handler produces a number, which rewinds and triggers the speed parameter with said value. This causes different time-stretching values every time there is a change in the value inputted. This handler also modifies the 'reverb time' parameter of a reverb effect in an inversely proportional manner -the faster the speed, the smaller 'reverb time', and vice versa. A video of *NOISA Étude #2*, can be seen at <https://vimeo.com/134134739>

Chapter 4

Discussion

Following the promotional campaigns of the releases featuring one or more *Collages*, there was a number of published reviews discussing the pieces. Most of these reviews, ranging from early 2014 until late 2016, had the particularity of also debating the use of appropriation in music from multiple perspectives. The impressions of these music journalists constitute a very insightful take considering the diverse focus of the outlets from which the articles were published, and also the varied backgrounds of the journalists themselves. In this section I decided to include and comment on some of the reviews that contribute to the topic of this thesis.

Peter Burwasser wrote for Issue 37:3 (Jan/Feb 2014) of *Fanfare Magazine* (US), reviewing the album *Electronic Masters Vol 2*, released by Ablaze Records. My piece, *Collage 2*, was part of the release. The last paragraph of the review reads:

"We get gobs of sound, layers of micro-tones, and a dynamic and harmonic range that seems to test the perceptive abilities of the human ear. When a composer's credits include sound design (Juan Carlos Vasquez) (...) you should have a sense of what to expect here. None of the composers claims to be inspired by Haydn sonatas. But if sheer aural atmospherics and experimentation appeals to you, this might light your fire. [58]"

The reference to Haydn is very eloquent and gives a clear idea of the aesthetic perspective of this particular journalist. I found his opinion quite interesting for a

debate, considering that Fanfare Magazine, founded in 1977, is among the "general-interest magazines devoted to classical music" according to a 1980's article by the New York Times [59]. In other words, it fits the description of 'classical tradition' well. After reading the review, I contacted Peter Burwasser to kindly let him know that my piece is not only influenced by a piano sonata from classicism, but is literally a deconstruction and reorganisation of Beethoven's *Waldstein*. As a response, a second review was published on Fanfare's website, this time by writer Art Lange:

"Juan Carlos Vasquez's Collage 2 is constructed from digital audio processing of an acoustic piano performance of Beethoven's Waldstein Sonata, but disembodied and distorted to the point where the charged energy and unfamiliar timbres would be unthinkable in any other format, and without revealing any of its source material" [3]

While the above might seem ambiguous in terms of an aesthetic judgment, Lange continues making a remark about the general practice of composing with the help of technology in the classical music context:

"Elsewhere in this issue of Fanfare I cited Goethe's first query of criticism: What is the artist (or the artwork) trying to do? His third question, however, was "Is it worth doing?" And this is where we run into one of the major problems that afflict this disc. Several of the pieces herein are based upon conceptual premises devised by the composer/technological or theoretical premises that make perfect sense as stated, but do not necessarily translate into sheer musical interest."

Lange then proposes a debate on why one would bother at all to conceive of an electroacoustic appropriation of classical music. Moreover, he also seemed critical to the rest of the pieces in the release by attacking what he perceived as a compositional approach too concerned in technological premises. In sharp contrast, we have the review of *Collages* written by Jack Chuter of ATTN:Magazine in England. This magazine describes itself as "an exploration of new experimental music and sound art, founded on a love for the failures and contradictions in articulating the experience of listening." [60]. Chuter evocatively suggests that the *Collages* could be also an artistic representation of the classical composers' personality in addition to simply

appropriating their work:

"The album takes the solo works of several classical composers (Beethoven, Ysaye, Mussorgsky, Bach, Borges, Chopin, Satie), and smears it upon the palm of digital processing, wedging mirrors into performances that, in their original form, may appear so singular and unfaltering. Through the blurs and cavities of his collages, I find myself instantly questioning my perception of classical performance: what if the original pieces -which seemingly exhibit their composer in immaculate truth, flawlessly assured as they navigate time and space- are actually compiled of micro-fragmented doubt and humorous quirk? As Vasquez twirls Bach into a small room of phobias, shadows, childhood videotapes and queasy nightmare merry-go-rounds, am I hearing the amplified ticks of composer personality that always resided, dormant and microscopic, within the original work?" [61]

In an alternative interpretation, Matthew Sweeney -a writer specialised in "underground music and sound art" [62] from the web portal Foreign Accents- explains how listening to the different *Collages* changed his perspective of the classical pieces featured as sound material:

"Collages is a challenging, fascinating work. Whether it's the pleasant undulations of Collage 5 The Acrobat (After Satie) or the dramatics of Collage 1 (After M. Mussorgsky), the album will compel you to look back into the works of these different composers with a different ear, and to re-listen to the album itself to try and catch all the things that you may have missed the first two times around." [63]

Similarly, Miguel Isaza from Sonic Field makes a precise judgment regarding the role of technology in *Collages*. For him, in *Collages* "(...) technology opens up new realms found in the depths of legendary songs." [64] Tomasso Gorelli -from the italian website The New Noise- shares the same idea, but making clear beforehand how the *Collages* does not resemble the aesthetic parameters of the pieces that they are based on:

"In other words, in Collages Beethoven does not sound alla Beethoven, and this applies to all (from Bach to Satie, through Ysaye, Chopin and Mussorgsky until the

closing literal digressions of Borges). However, we are far from the idea "who knows how it would sound if ...": here the "electroacoustic" becomes a tool with which to make light in the shadows of those scores and in those fibers of the sound that are between note and note, thus creating new perspectives of listening." [65]

Both releases of the *Collages* series have been created in a range of time that spans over several years; during this time, the opinions of those completely unrelated to the creative process is always fruitful and eye-opening. The debate generated from the first release was critical in shaping the aesthetic principles of the second volume, and was also a crucial point in building the conceptual framework that accompanied the new repertoire for NOISA. Keeping this discussion alive will be a priority for my present and future releases, as it expands the impact of these works from a listening experience into a stimulating aesthetic debate.

Chapter 5

Conclusions

My attempt in this thesis was to document my application of sound appropriation by describing both the content and layout of my research. In terms of content, both projects -NOISA and *Collages Vol. 2*- borrow primarily prerecorded music from classical composers as the seed of all of their audio processing events. In regard to layout, each project aimed to cover applications of appropriation both in studio and in a live situation, respectively. After providing context and a short survey of my influences on music appropriation, I made comprehensive documentation of each of the pieces created for this thesis, describing form, content, compositional approach, and sound processing in a systematic way.

During the discussion, I examined the debate that appropriating classical music generated in the previous releases of *Collages*. The opinions given by the reviewers demonstrate that the goal of encouraging a debate within the community was achieved in an initial form. Maintaining this debate will be a continued priority. In respect to the aesthetic value of appropriation, it is important to point out that while Art Lange from *Fanfare* questions the purpose of digitally reinventing classical music, on the other side of the spectrum none of the journalists from more 'avantgarde' outlets expressed a radical opinion such as John Milton's, for whom plagiarism of a work would only happen "if it is not bettered by the borrower." [24] However, I steer clear of presenting myself as "bettering the borrower" in any way, as I profoundly respect and admire every composer I paid tribute to in my releases.

Both *Collages* and the exploration in a live context with the NOISA series open the terrain for further research, which justifies the inclusion of pieces without appropriation of classical music, such as Collage 17 and 18. My plans include developing a systematic methodology for acousmatic music composition evolving from appropriating sound material into appropriating compositional techniques, specifically motivic through-composition. It will consist of replacing the usual motivic variation techniques -involving rhythm, intervals and harmony- with digital signal processing through audio effects. The concept of incremental grouping (phrase-motif-theme) will be preserved, guaranteeing a systematic approach towards the construction of form. The orchestration parameter (as in Collage 18) will be regulated by the concept of balance in audio mixing, achievable through allowing processed streams to have their own predominate frequency range.

While the documentation of both *Collages Vol. 2* and the NOISA projects aim to contribute to a better understanding of my work, I aspire to have conceived a valuable artistic project, regardless of whether or not it is experienced while knowing about the context in which it was created. Therefore, I strongly encourage the reader to listen to the pieces, seeking a pure aesthetic experience. With time it will be possible to elucidate if it was indeed a successful creative attempt, or just another experiment of our fast-moving era.

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