

SOPRANOTRONICS 101. AN ANALYTICAL APPROACH WITH REPERTORIAL PROPOSAL

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SUMMARY. The current work aims to present an investigation of the past seventy years of Sopranotronics repertoire, approached through the eye of the performer. The Soprano *Fach* and the electronic environment merged in the last decades into a new interdisciplinary performance field, which is both artistic and scientific in its making. The Sopranotronics now offers a fresh vocal repertoire with challenging drama stories and thought-provoking art. Whether expressing a political disagreement (Nono's *La Fabbrica Illuminata*) or describing a mythical story (Babbitt's *Philomel*) in chamber works; writing a four-hour opera without dramatic action and a storyline (Glass's *Einstein on the Beach*) or inventing the disembodied performance while the most humane character of the opera suffers because of this (Machover's DATP) or chanting for spirits in an electro - acoustic aria (Crețu's *I.X.@100*) and challenging any musical and vocal establishment in a dadaistic formula (Beldean's *Tekmirio*) brings forward the human component of this experimental art worth performing.

Keywords: Sopranotronics, Soprano *Fach*, electronic music

Introduction

When talking about the Soprano *Fach* one will immediately think about Verdi's Violeta, Puccini's Mimi, Mozart's Queen or Händel's Cleopatra to name just a few. The Soprano *Fach* is primarily associated with the main

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high role of most operas being often coupled musically and theatrically with a high male role, the tenor. This Soprano falls in love, suffers, dies or lives out, caring the *libretto*'s drama throughout the acts. One may also associate the Soprano *Fach* to a chamber music setting such as in Schubert's *Der Hirt auf dem Felsen* or Schönberg's *Pierrot Lunaire* or to art song cycles by different classical composers. After being used as *discantus*, *canto*, *high voice*, the Soprano *Fach* as we use it today became defined in the 19th century's vocal pedagogy collecting by now a history of vocal repertoire of almost a half of millennium.

For the past century, the listener has been acquainted with electronic music and synthesized sound, the *Theremin* being one of the first electronic instruments used in concert at the beginning of the 20th century. The era of new technologies which gave us the audio, the television and the recordings brought to the classical music a new vibe, an artistic force that became today quite in demand, at least in places where the Electronic Music Research Centers and Labs exist. In order to enhance the traditional orchestral colors or to purely create archaic or non-existent timbres new equipment has emerged. Synthesizers and digital pianos are used to generate, to imitate or to modify sounds. Samplers allow musicians to record and play back sounds by activating a keyboard key and enable one to incorporate sounds from different sources. Software for creating, editing, performing and learning music have been developed at such speed that now technology and electronics have joined the classical genre. Consequently, the Sopranotronics merged and fused into the performing vocal repertoire.

Karlheinz Stockhausen may be considered the father of the Sopranotronics, with his composition *Gesang der Jünglinge* in 1955-6, an electronic 12-minute piece with recorded boy voices, named by the composer *voices of angels* in 2001 when performing it live at the Polar Music Prize Ceremony². Meanwhile the vocal dadaism has been initiated by Marcel Duchamp in 1934 with *Erratum Musical*, an 8-minute piece for three *acapella* voices: Marcel's and his two sisters. "In composing this piece, Duchamp made three sets of 25 cards, one for each voice, with a single note per card. Each set of cards was mixed in a hat; he then drew out the cards from the hat one at a time and wrote down the series of notes indicated by the order in which they were drawn"³. Steve Reich's *It's Gonna Rain* and *Music for 18 Musicians*⁴ produce through its minimalism a new approach to the vocal

² <https://www.youtube.com/watch?v=UmGlibFWI0E> [accessed July 2022].

³ *The House of Hidden Knowledge*, a professional database of archived videos of 20th century music: <https://www.youtube.com/watch?v=Ok4aQ98kzNs> [accessed July 2022].

⁴ performed at Staller Center of the Performing Arts with Stony Brook Contemporary Chamber Players, 2004, SBU New York.

Fach. Iannis Xenakis took the Soprano out of her standard register in his *Akhantos*⁵ challenging her to a range from F3 to D6. Adding on to this non-conventional vocal behavior an electronic component will create a movie-like aria, scene, chamber work or opera, with hypnotic effect on audiences while the singer challenges her mind and senses. The Soprano does not just learn a vocal line based more or less on intervals and pitch relations, but she must achieve a high level of musicianship and interdisciplinary competencies beyond teamwork. The world of Sopranotronics was born mixing serialism, dadaism, minimalism, standard or unconventional vocal expression with electronic support of the voice. This article aims to highlight representative and performed works of this repertoire.

1964 - Nono's *La fabbrica illuminata* and Babbitt's *Philomel*

La fabbrica illuminata and *Philomel* are both composed in 1964 for *live* Soprano and electronics, in both cases - tape as accompaniment and have a similar length of about 17-18 minutes. They say two different stories: the first one is Nono's public disagreement towards the work conditions of Venetian workers from *Italsider* steel plant while Babbitt's piece describes the Greek mythological character, Philomel, who is transformed into a nightingale.

La fabbrica illuminata is based on a dialogue between the *live* soprano and the tape carefully thought on four sections: *Coro iniziale*, Solo tape, *Giro del letto*, *Tutta la città - Finale*. "For the tape Nono used selections of music sung by the chorus of the Rai of Milan directed by Giulio Bertola, 'thematic' improvisations sung by mezzo-soprano Carla Henius, voices and noises from the *Italsider* plant, and synthesized sounds. All this material was elaborated at the Rai Studio of Musical Phonology in Milan, where it was combined and electronically modified often beyond recognition"⁶.

The soprano is placed center stage while surrounded by four loudspeakers. Her voice is not amplified according to Ricordi's performance notes. Her glossary of symbols includes whispers, half whispers, spoken words on pitch or without pitch, *quarter-tone oscillation* around a certain pitch and fermatas. Nono marks on score cues for her in the recorded sound events. "Often these cues, if interpreted in terms of equal temperament, do not exactly correspond to the actual pitches one hears on the tape. As Liliana

⁵ performed at *Xenakis's Festival* in Braşov and Brăila, RO, October 22nd-24th, 2022.

⁶ Nono, Luigi. *La Fabbrica Illuminata* per soprano e nastro magnetico a quattro piste, Ricordi, 1967; 2010, Introduction, pp. XXI.

Poli has advised, it is always more important for the soloist to respect the interval between the tape and the voice that is notated in the score rather than to sing the pitches of the vocal line as written⁷.

Nono's soprano in *La fabbrica illuminata* seems placed in a movie to which she has to react in real time.

E.g. 1

Luigi Nono's *La Fabbrica Illuminata*: excerpt from Part II, *Giro del letto*
Dialogue of live Soprano and recorded voices

Beyond their year of composition, 1964, Babbitt's *Philomel* shares other common features with Nono's *La fabbrica illuminata*: both have a live soprano in a dialogue with recorded voices and synthesized sound, in this case the tape contains the recorded voice of Bethany Beardslee, a coloratura soprano. The music shows the state of Philomel in the forest while she becomes a nightingale, being chased by Tereus, her sister's husband, who initially raped her and cut her tongue⁸. Structured as a serial work on a twelve-tone matrix⁹ the vocal treatment of the score emulates the birth of the nightingale in a strong relation with the recorded voice. In her *Echo Song* Philomel disintegrates her persona. She frees herself from pain through singing in a piece where deep and precise "structure is ruled by poetry"¹⁰.

⁷ idem, Performance Notes, *Advice from the interpreters to interpreters*, 45, pp. XXXIV.

⁸ <https://www.wisemusicclassical.com/work/25741/Philomel--Milton-Babbitt/> [Composer's Note: accessed December 2022].

⁹ Adamowicz, Emily J. *Subjectivity and Structure in Milton Babbitt's Philomel*, MTO Journal of the Society for Music Theory, 17:2 (2011), Example 1c.

¹⁰ idem.

Bed: The Soprano Scene in Philip Glass' *Einstein on the Beach*

On November 27th 2022, Elbphilharmonie Hamburg¹¹ *live* streamed Philip Glass's masterpiece *Einstein on the Beach* (1976) in a production with *Collegium Vocale Gent*. A four-act opera which was originally composed to last 4 and a half hours consists of 2 female, 1 male and 1 male child speaking roles, 16 members of a SATB chamber chorus, a soprano soloist and a tenor solo¹². A story with no story, no Einstein, no beach¹³, no intermission, with audience free to walk out during the performance, and where the main vocals are cared out by the chamber chorus joined by 2 synthesizers, 1 violin, 1 flute, 2 saxophones, 2 conductors (in Elbphilharmonie production), each voice and instrument being amplified raises the question: is *Einstein on the Beach* an opera? Since there is no story to tell the producing opera company "will have the option either imitate the 1976 production of Robert Wilson's direction or to reinvent new series of stage and dance pictures based on themes relating to the life of Albert Einstein"¹⁴. Elbphilharmonie's production was a new recreation of the work under the direction of Alexandre Fostier and scenographer Germaine Kruij. The vocal work of the chorus throughout this opera is tremendous: one must continuously sing repeated patterns on numbers or on solfeggio with no time for swallowing up to 30 minutes at once.

The opera starts, ends and connects through the four acts with a different Intermezzi called *Knee Plays*. Act I, II are structured symmetrically into Scene 1, Intro to, Scene 2. The third act consists of two Scenes, and the fourth one of three Scenes. *Bed: Cadenza-Prologue-Aria* is Scene 2 from the last act and proceeds the last movement, the *Spaceship Scene*. *Bed* consists of 46 numbers. After performing almost three hours, the Soprano who also sings the Chorus reaches her solo scene and starts singing at number 35 at *Meno Mosso*. There is no bed in the staging. The synthesizer (Organ 1) introduces an out-of-space mood, yet mystic and ritualistic in manner with its organ-like sound. The prelude of the aria consists of repeated rhythmic patterns on major and minor chords. Coventry Chelsea discusses in her

¹¹ https://www.youtube.com/watch?v=TiCH2WJ_lvY [*live* streaming, accessed November 2022].

¹² Glass, Philip and Wilson, Robert. *Einstein on the Beach*, full-score, [accessed through nkoda.com, an application which enables access to non-public-domain scores of major music publishers].

¹³ Mark Swed, Classical Music Critic for Los Angeles Times, November 18th, 2020, <https://www.latimes.com/entertainment-arts/story/2020-11-18/philip-glass-einstein-on-the-beach-opera>, [accessed December 2022].

¹⁴ <https://www.wisemusicclassical.com/work/12766/Einstein-on-the-Beach--Philip-Glass/>, [accessed November 2022].

dissertation¹⁵ how the A flat - A natural occurrences are playing an important role in the harmonic support throughout the opera and also in the *Bed Scene*, where an A natural minor scale is heard before the singer's entrance.

The prelude is followed by a surreal vocal line on vowel A for circa five minutes. Whole notes, half notes and dotted half notes make up the melody on different units of pitches: *A flat-C-D*, *C-E flat-E-F#*, and *F-B flat-C-F#*.

The effect conveys a sense of mystery, her moments last about 8 minutes recalling perhaps something archaic in the human voice which seems hard to name. Yet a sense of the human essence is perceived through the musical effect created between the Soprano and the synthesizer.

Picture 1



***Bed Scene: Cadenza-Prologue-Aria performed by
Collegium Vocale Gent Soprano***

¹⁵ Coventry, Chelsea M., "Einstein on the Beach: A Global Analysis" (2014), Student Research, Creative Activity, and Performance - School of Music, 72 DigitalCommons@University of Nebraska - Lincoln, pp.51.

Picture 2



***Collegium Vocale Gent in Einstein on the Beach*
at Elbphilharmonie, Hamburg, live streamed on November 27th, 2022**

Transcending any expectation, *Einstein on the Beach* redefines opera and the singer's role in it. Glass's opera has been in high demand for the last decades. The *WiseMusicClassical* reports 17 new productions of *Einstein on the Beach* only in the 2000's in Germany (5), the U.S.A (5), France (3), U.K. (2), Austria, Belgium and Canada¹⁶ while Robert Wilson's website informs of the *Einstein on the Beach* international tour which concluded in South Korea in 2015¹⁷. *Operabase* presents 26 performances of the opera throughout the world including Japan in 2022 only, and it is expected to be performed in 2023 at *Teatro Colón* in Buenos Aires, Argentina.

2010 - Miranda in Tod Machover's *DATP, the Robot Opera*

One of the most successful contemporary works which combines the use of human voice and technology is the science fiction 90 minute-opera *Death and The Powers: The Robot Opera* (DATP, 2010) by established composer, Tod Machover (b.1953, New York -). Its libretto tells the story of

¹⁶ Wise Music Classical, Publisher of 20th and 21st century composers.

¹⁷ robertwilson.com, [accessed in November 2022].

Simon Powers, who uploads his consciousness into the System, taking with him one by one his family members and his research assistant. DATP's orchestral ensemble combines fifteen conventional instruments, a robotic multi-stringed instrument, the Chandelier played on stage by the singer, Evvy, by plugging or dampening, one keyboard with *live* electronics and a second keyboard with electronic triggers for sound and image.

In Scene 6 - *The World Reacts*, Simon's daughter, Miranda sings the most ravishing aria: *I miss having a father*. Throughout its 39 measures the aria keeps a 6/8 main pulse, which is occasionally interrupted by a 5/8, 3/8 and 2/4 meter perhaps to accommodate the English rhetoric but also to suggest Miranda's emotional state. One could find a beautiful melody in her vocal part ranged between E4-A5 - which would be considered common for the Soprano *Fach*. The vocal line that would almost induce a minor key is supported harmonically by the chamber orchestra, two keyboards and electronics, which indicate in the score Timbral "Shadow" of Miranda's voice (E.g. 2). Once Miranda's scene ends the "Electronics timbres shadow Evvy"¹⁸.

E.g. 2

The image shows a musical score for Miranda's Aria. It consists of four staves: Kbd. 1, Kbd. 2, Electr., and Mir. The Kbd. 1 staff has a treble clef and a key signature of one sharp (F#). The Kbd. 2 staff has a treble clef and a key signature of one sharp (F#). The Electr. staff has a bass clef and a key signature of one sharp (F#). The Mir. staff has a treble clef and a key signature of one sharp (F#). The lyrics under the Mir. staff are: "flesh and blood. I need to touch my moth-er. Like an-y oth-er per-s". The score includes various musical notations such as notes, rests, and dynamic markings like *mf*. There are also annotations like "A6-23", "A6-24", and ".....timbral shadow of Miranda....." in the Electr. staff.

Tod Machover, *DATP*, keyboards and electronics in Miranda's Aria, pp. 307

¹⁸ Machover, Tod. *Death and The Power, The Robot Opera*, Hanoa Productions, Inc., Hendon Music, Inc., Boosey and Hawkes, 2010, pp. 312.

I miss having a father aria prepares both performer and listener for Miranda-Simon duet from Scene 8, where the entire vocal, instrumental, digital and electronic apparatus is deployed to reach the climax of the opera. Once the human characters change their condition becoming robots, the traditional instrumentation is almost eliminated from the accompaniment, the digital and electronic sound match now the vocals of the four robots who conclude the opera saying: "Coming to rest... why choose to suffer? units deployed as individuals will receive 1000 human rights status credits"¹⁹. Beyond the philosophical stretch of DATP, Tod Machover portrays in an exquisite manner a real depiction of the 21st century man and his relationship with artificial intelligence. The remarkable feature of Machover's DATP is the live equilibrium created between music, theater and technology. A large number of digital artists manage and synchronize: 40 computers, 143 speakers, the ambisonic environment, and 7 running software - a quite dense "technological layer on top of conventional scenic design"²⁰.

In the four productions of Machover's DATP that took place so far in Monaco (2010), Boston, Chicago (2011) and Dallas (2015) Miranda was beautifully created by the voices of Joëlle Harvey and Sara Heaton, two well established coloraturas. DATP proves that melody as we know it can be identified in the most unusual musical architecture, that emotional and communication in singing occur still through both text and audio-visual, and as never before through technology²¹. Machover's music unites the human feeling with the human mind in the most artistic way initiating a new performing experience: the digital opera.

Cătălin Crețu's *I.X.@100* for Soprano and fixed media

I.X.@100 reads as *Iannis Xenakis at 100* for soprano and fixed media, and it is a 7- minute vocal piece with an accompaniment both electronic and acoustic²². The composer, Cătălin Crețu inspired by Xenakis name creates a vocal pitch structure to be performed theatrically within an

¹⁹ Machover, Tod. *Death and The Power, The Robot Opera*, Hanoa Productions, Inc., Hendon Music, Inc., Boosey and Hawkes, 2010, pp. 382-4.

²⁰ Torpey, Peter A. "Digital systems for live multimodal performance in *Death and the Powers*" *International Journal of Performance Arts and Digital Media*, 8:1, (2012), pp. 110.

²¹ Buhaiciuc, Mihaela. *When Human Emotion meets Technology: A Study of Machover's Death and the Powers, the Robot Opera*, *Tehnologii Informatice si de Comunicatie in Domeniul Muzical*, IV:2 (2013), pp. 65-73.

²² Cretu, Cătălin. "Four States of Iannis Xenakis' Personality and their Extensions in the Contemporary Digital Environment", *Transilvania University Bulletin, Brasov*, VIII, Vol. 15(64) No. 1, 2022, pp. 71.

amplified environment. Cretu explains in his article how numbers such as 1922, 2022, 2001 or letters as *X, N, I, A* become musical notes via Musical Instrument Digital Interface (MIDI) - a standard protocol for communicating musical information between computers, synthesizers and other electronic instruments - shaping *I.X.@100* as a mathematical based composition²³.

Despite its rational construct, *I.X.@100* is an incantation based on vowels *I, A, E*, sung or spoken in order to summon the spirit of Iannis Xenakis at the *Xenakis Festival* in Brasov in October 2022. *I.X.@100* is a mini ritual based on character's breath pace measured in the score at specific timing. The introductory moment belongs to the performer, who runs on stage executing exhalations towards the four cardinal directions: East, West, North and South. When the audience is faced, the electro-acoustic performance is generated by the composer from his computer. The piece could be theatrically divided into three scenes:

(1) the 2 minute-descriptive scene which includes the preparation motif based on breathing and a chromatic scale, followed by the musical enunciation of the years: 2022, 2001, 1922 all sung on the vowels *I, A, E*; fitting into measures of 15/4, 8/4 and concluding with two measures of 6/4. The four music staves of this scene are vocally in opposing registers: the scale rises chromatically from a G3 to a G#4 and is followed after a *fermata* by A5-G5-A5-A5 motif, mirrored in the medium register on F4-G4-F4-F4 motif, and going back to the *secondo passaggio*: A5-G5-G#5. The vocal key to this scene is the F#-B flat-F pattern, which acts as a brief cadenza and also a transition into the next moment.

(2) The next two-minute section constitutes the actual chant calling Xenakis' spirit, moment that culminates with performer's falling on the floor while shouting out *N, X, S, K* consonants on *Sprechstimme* and repeated *glissandi* on an *A* vowel. This is the dramatic climax of the piece while the electronic background supports the human instrument with a lab produced "granulated"²⁴ sonority. There are two vocal movements that become augmented in this section: G3-D4-B3-F4 is elaborated to G3-D4-B3-F4-A4-G4-B4-D5-C#5-D#5-F#5 (E.g. 3), and a rhythmic formula on seven pitches of F#5 based on a quarter-sixteen pattern developed through repetition as long as needed until minute 3'28" (E.g. 4). The performer returns to the breathing pace that initiated the chant at the beginning.

3) A transition of four measures of 7/4 follows and seems to be either an answer from the spirit or a disappointment of the chanter. This 30 seconds-section is almost a legato movement with some harmonic support

²³ Cretu, Cătălin. "Four States of Iannis Xenakis' Personality and their Extensions in the Contemporary Digital Environment", *Transilvania University Bulletin*, Brasov, VIII, Vol. 15(64) No. 1, 2022, pp. 71.

²⁴ idem, pp. 65-67.

in the acoustics, which leads back to the chant itself: the G3-D4-B3-F4 motif prepared with sighs on G3 and followed conclusively with a run of chromatic pitches in *zona di passaggio* and *primo passaggio*. The singer walks out the stage continuing chanting for herself: F#5-E5-F5-Eb5-G3-D5 for as long as it takes to leave the stage.

E.g. 3

Cătălin Crețu, *I.X.@100* main vocal movement in second tableau

E.g. 4



Cătălin Crețu - motif on which vocal and dramatic climax are built in *I.X.@100*

One may observe throughout the score that 13 pitches of G3 in a seven-minute work for Soprano would not be what a conventional Soprano *Fach* is expected to perform. However, *I.X.@100* for Soprano and fixed media is inspired by Xenakis's works and it is dedicated to him²⁵. *I.X.@100* was premiered in Brasov at *Xenakis Festival* on October 22nd, 2022 having as performers: the author and the composer.

The Vocalists of Laurentiu Beldean's *Tekmirio*

Tekmirio is a twenty-minute chamber-work for SSAMzMzTBarB, two pianos, percussion, 1 keyboard-midi and live electronics premiered during *Xenakis Festival 2022* in Brasov.

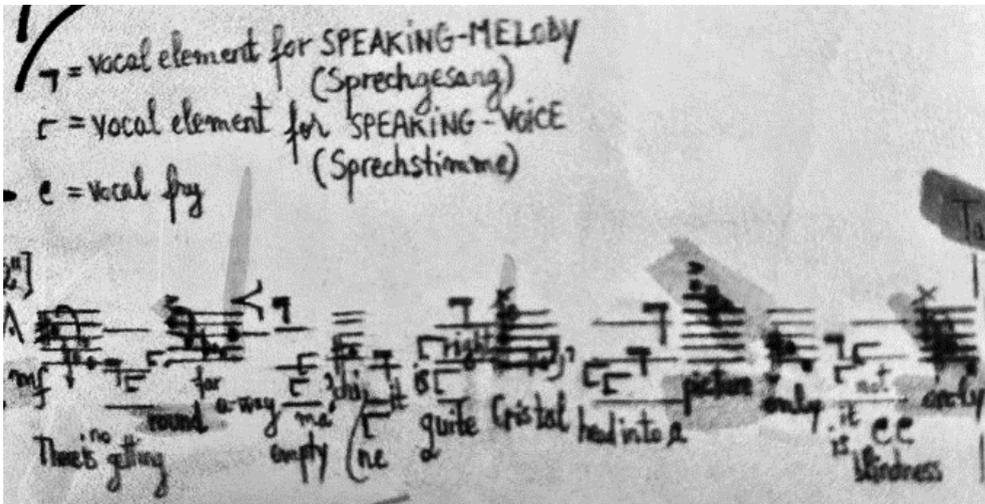
Designed as a Dadaist work, *Tekmirio* rejects any traditional sound value fully embracing the irrational. The work is structured in juxtaposed layers of random sounds: the first one belonging to the piano and percussion

²⁵ idem pp. 71.

performers, the second one to the 8 Vocalists and the third one to the electro-acoustic component. The second sound layer of *Tekmirio*, the vocal element includes 2 Sopranos, 2 Mezzo-Narrators, 1 Alto, 1 Tenor, 1 Baritone, and 1 Bass. The first tableau, which begins after first layer of piano-percussion occurrence, mixes individual pitches of the different voices with drops without *glissandi* on non-sense wording written in English IPA. The technical challenge as well as the theatrical one consists in pushing the range of the voice outwards and creating movement not through melody but through either vocal ups or drops, voice vibration, whispers, glottal sounds, or breathing patterns. The conventional rhythm is broken and consists of irregular meters of 2-3-6-1-4-5-2-4-3 pulses which become regulated through wording by the singers' signals. Within the Vocals' layer, each voice will take its space and time to elaborate its unique form of expression via expressive speech, *Sprechstimme*, random sounds, noises, and gestures, modified melodies and use of household items such as knives or laundry dryers.

The first soprano's personal moment of artistic freedom is encapsulated in the beginning of the work throughout two architecturally designed pages of the score. While singing random pitches from B3 to B5, the Soprano moves through them with speech, *Sprechstimme*, values of pitches interrupted by measured breaks shaping a monologue of an unhappy woman which seems to strangle herself.

E.g. 5



Laurentiu Beldean, *Tekmirio*, page 2, Section B, 16" 1/2 minutes - highlighted sung pitches with text

Once her absurd moment in English approaches the end, the scene is augmented through the background presence of the other voices who intertwine with speech, labial consonants and a distorted reproduction of Schubert's *In der Ferne* in the second's Soprano line. After a percussion solo moment, a cluster of the Vocals is created on similar German text: *Was mein Mond spricht*. The 8 singers are instructed in the score to follow a different meter unit: the Baritone and Soprano 1 are both on a metronome pulse of 50, the Tenor and Soprano 2 are on a 56 metronomic pulse, while A-Mz2 of 63 and Mz1-B of 69. However, this brief couples happening quite fast do not start at the same time. Again, within the vocal cluster, the wording and personal pulse in the rhythmic coupling are taken as a time signal rather than the conductor, who as a listener is also surprised by the sound effects produced. Each voice will follow its moment of non-sense free expression: the alto screams and uses numerous utensils for noise making, the tenor imitates Mickey Mouse and Donald Duck's voices and plays a guitar, the Baritone destroys some newspapers while the Bass chops the strings of a piano-box. While the entire apparatus joins in, the keyboard midi makes its presence noticed while the composer generates live electronics from his station. A rhythmic quartet of four knives contribute to the created sound texture. The mood is briefly changed with a tonal vocal quartet *O gran stupore, O gran' errore* - this time an Italian excerpt, while the S1, Baritone-Bass momentum moves independently on pedal-like pitches marked legato. Tibetan bowls are introduced to the vocal layer followed by a rhythmic Latin chanting in *Strata Alpha* and pitched noises on A vowel in *Strata Beta*. The climax of nonsense and absurdity is achieved, when meeting at the Gothic church, the ATBarB vocal quartet cites an excerpt from the *Trisagion Hymn* used in the liturgy of the Eastern Orthodox, Oriental Orthodox and Eastern Catholics churches. The three lines of the *Trisagion* translates *Holy God, Holy Mighty and Holy Immortal*, which are partially quoted here while the rest of the singers pick-up random French words from the page and fade out concluding the piece.

Although it may raise disagreement from conservative singers, *Tekmirio* is an experimental chamber work that will sound very different every time will be performed. Its design is meant to challenge listener's perception about music and the performance of human voice and creating a sense of surprise and break from any musical and vocal establishment.

Conclusion

Whether expressing a political disagreement (Nono's *La Fabbrica Illuminata*) or describing a mythical story (Babbitt's *Philomel*) in a chamber work; writing an opera without dramatic action and a storyline (Glass's *Einstein on the Beach*) or inventing the disembodied performance while the most humane character of the opera, Miranda suffers because of this (Machover's DATP) or chanting for spirits in an electro-acoustic aria (Crețu's *I.X.@100*) and, challenging any musical and vocal establishment in a dadaistic formula (Beldean's *Tekmirio*) brings forward the human component of this interdisciplinary area and proposed concept: the Sopranotronics. The postmodern singer learns to fuse the old with the new releasing the tension between the two of them. In the analyzed works the Soprano *Fach* is challenged: sometimes its ambitus remains open to interpretation; its colors and movement reach closer to nature imitating anything from noise, echo, sensations and bird songs while the voice must remain flexible, yet firm. The singer relates to pitches through its own instrument, whose function she must apprehend really well. The new interdisciplinary domain, which combines art and science in the physical making of it provide an innovative and refreshing vocal repertoire to contemporary performers. The Sopranotronics bring to me a restoration of a forgotten body poise and feeling, a physical force which puts the voice back into nature and regulates it to its vital parameter: natural freedom, a freedom which perhaps challenges the cultural norms and values in many of today's places; a freedom which somehow has been imprisoned in the so much made-famous Soprano repertoire.

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