

Aspects of originality in the Musical Creation of some Romanian Engineers

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Abstract: *The pathway from engineering to music is beneficial for both fields. They are both sciences and arts that express themselves in apparently distinct dimensions: the concrete field embodied by engineering, and the field of emotion, embodied by music. Paradoxically, on the one hand, the field of engineering, through a proven sensitivity in applied research can become art, and on the other hand, music, through mathematical substrate, through elaborate geometries, is also science.*

The present study represents a musicological research, through which we set out to bring to light the achievements of valuable composers whose initial path was the field of engineering. Proving competence, rigour and conscientiousness in education, they travelled through the technical field in the first stage of their career. Afterwards, the same mental, cerebral, organized, abstract structure allowed them to focus on what their vocation really was, the music. The composition and musicology was the right choice because their represented, through its applied techniques, a logical and mathematical program proper to their education coming in union with the sensitivity of their personalities. Thus, we have outlined the stylistic profile of the composers Theodor T. Burada (1839-1923), Gheorghe Dima (1847-1925), Iacob Mureşianu (1857-1917), Ştefan Niculescu (1927-2008), personalities who contributed greatly to the Romanian musical culture, integrating it into the universal culture.

Key-words: *composition; engineer; mathematics; music; thinking; stylistics.*

1. Introduction

Engineering is defined as the science that researches, conceptualizes and applies technological works and structural assemblies through its sub-domains: mechanical, electrical, electromechanical, chemical, electronic, mechatronic. This vast domain is structured on the etymology of the word that comes from the Latin word *ingegnere* which means ingenious, creative.

Music is also the science that, through sound and its creator, conceptualizes and interprets artistic works which have as dominant substance the aesthetic norm of beauty. In the present study, the two fields cross each other, reminding us that engineering can be an art, through the captivating design of the projected objectives, just like music is conceptual in all its approaches, submitting itself to scientific rigours. Thus, with a certain frequency, in time, in the culture of universal music, we meet creators who, although at one point chose to approach the technical field, returned to the musical field driven by the unstoppable passion of the artist.

The hypothesis of this study refers to the ability that in time became creative mastery, of some personalities of the Romanian music, educated in the field of engineering, to become flawless in the field of music.

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2. Aspects of originality in the Musical Creation of some Romanian Engineers

Teodor T. Burada (1839-1923) was a complex personality, a particular individuality, who got remarked for his many skills which conferred him professional and social authority. The first part of his education, which confirmed the hypothesis of our study, was oriented towards schools of technical profile. Thus, T. T. Burada attended the courses of the Military Artillery School in Iasi (1856-1857), of the *Mihăileni Academy* in Iasi (1858-1860), the Faculty of Law in Iasi (1860-1861), and, in Paris, two other faculties in parallel, the School of Bridges and Highways of Paris, the Faculty of Law of Paris (1861-1866). Thus, he was also granted the quality of engineer, due to the courses attended at a superior technical institution, committed to obtaining the competence of bridge and road builder. Nevertheless, that was not the orientation that stabilized him in the field. Before engaging on a technical path, T. T. Burada had graduated in Paris, the *Conservatoire imperial de musique et déclamation* (1861-1865), which marked his career. Thus, encyclopaedic spirit, scholar, concerned with the musical research, he became the first Romanian musicologist, giving that vast musical field of research “a new scientific dimension, borrowing its multilateral valences to impose it at national and universal level.”²

Thus, T. T. Burada becomes known in the Romanian music culture, as being at the same time violinist, teacher, but especially folklorist, ethnographer and musicologist. The fields on which he bent witfully, with interest and thoroughness for research, were: musicology and musical historiography; lexicography, through the studied biographies; folklore, ethnography and ethnology; organology; didactic works; translations; chamber music; choral music; vocal music.

The vastness of this creation of intellectual nature proves a cultivated personality whose brain structure proven from the early years, made possible the efficient use of knowledge, through the research skill, being mobilized to work simultaneously in several directions of the vast field of musicology. We will mention a few works that prove his encyclopaedic development, his analytical nature, the manner of the special research in the spirit of educational utility, the attention to detail: Musicology, musical historiography: *The musical chronicle of the city of Iasi*, 1780/1860, - 1888; *Research on the music of the Romanian soldiers* (1891); Lexicography, biographies: *Dimitrie D. Cantemir* (1889); *George Enescu* (1919); Folklore, ethnography, ethnology: *Popular groans from Moldavia - Dobrogea* (1879); *A trip to the Romanians from Austrian Silesia* (1895); *About enchantments, charms, spells* (1916/1925); Musical Organology: *Trumpet* (1908); Teaching work; *XII studies for violin*, op.9 (1875); Translations: *Research on defective notes of bow instruments*. Translation after Achille Dien (1876); Chamber music: *Rhapsody on the folk songs of Romanians*, Eduard Caudella's orchestra (1905); Choral music: *The song of soldiers made by Stephen the Great* (1883); *Vocal music: Go gentle bird* (1898).

His extensive creation, in the fields mentioned above, determined Viorel Cosma, another remarkable musicologist of the Romanian musical culture, to appoint T. T. Burada as “the founder of the Romanian classical musicology.”³ Like him, the musicologist Mihail Cozmei, revealing the wide range of artistic and intellectual virtues of T. T. Burada, considers that: “As founder of the Romanian musicology and theatrical historiography, with remarkable contributions in many other fields (literary folklore, ethnography, archeology, literary history, memoirs, legal sciences, etc.), Burada was a humanist and a patriot, a man of culture educated in a classical manner, but with romantic temperament.”⁴

² Cosma, Viorel. 1989. *Musicians from Romania. Lexicon. Vol. I*, Bucharest: Musical Publishing House, p. 239.

³ Cosma, Viorel. 1989. *Musicians from Romania. Lexicon. Vol. I*, Bucharest: Musical Publishing House. p. 238.

⁴ Cozmei, Mihail. 2012. *Teodor T. Burada: un întemeietor*, Iași; Editura Artes, p. 208.

Gheorghe Dima (1847-1925) was one of the artistic personalities who contributed to the emancipation of the Romanian musical culture, preparing the original trajectory of George Enescu and of the enescian and post-enescian generation. At the twinning of the nineteenth and twentieth centuries, Gheorghe Dima dedicated himself to music on several levels, being a vocal performer, composer, conductor of choir and orchestra, pianist, teacher. From the level of each musical dimension, he always had the power to convey his creative value.

Following the advice of his parents and the conveniences of the time, Gheorghe Dima spent his youth studying in the technical field. The Vienna High School, with a real profile, was followed in 1866 by the Polytechnics, in Karlsruhe (Germany). However, during the same period of university studies with technical profile, G. Dima felt the urge for a musical improvement, being gifted with a remarkable bass voice. G. Dima wanted to cultivate consciously both the theoretical knowledge and the voice, so he took lessons in vocal singing, theory, harmony and counterpoint, while still living in the cultural cities of Austria and Germany: Vienna, Graz, Baden, Leipzig. Thus, his engineering career was diverted by the force of his musical talent; young G. Dima joined the Conservatory in Leipzig, between 1872-1874. The engineering skills, the rigour, the spiritual logic, the meticulous analysis did not manifest themselves as a profession, but as resources in his musical and creative professional activity.

Thus, through his culture, his tenacity worthy of an engineering education, and his impetuosity specific to the generosity of any artist, G. Dima left his mark in three important cities of the country: Sibiu, Brasov, Cluj-Napoca. In each cultural centre, he had by his side musicians, the audience, the family, who stood by him in his mission, to reform the Romanian music in Transylvania, to serve the specific national, laic and church song.

His stylistics, revealed and educated in Leipzig and then, after returning to the country, in the plenitude of the melodicy of the Romanian folklore, highlights a composer on “the first stage of the autochthonal classicism in an area of interfering cultures.” (Cosma V. 1999, p. 190), but also with obvious romantic accents. The musical genres, which make up his valuable record, from miniatures to broad ones, are dedicated to the voice. The chamber music was the genre to which the composer dedicated much of his creation, proving a great expressiveness of the contoured images, either through lieder, choral music, dedicated to mixed ensembles or children's voices, or works dedicated to piano or cello. Even the instrumental chamber music, through works for the piano, *Album for the piano*, on lyrics by Gh. Asachi, 1894, and the musical score *When will I forget you?* for cello and piano, 1894 are creations that acknowledge the breathing of the verse, the mirroring of the voice that, like an instrument, recites the verses of Romanian poets. With every work, he demonstrates the power of metamorphosis of his musical language, in which we find the rigorous principles of classical and romantic musical thinking, through genres and forms, and of living them in the spirit of the Romanian folk melos “managing to reach in the vocal genre (lieder, choirs, ballads, chants) the mastery of foreign contemporary creators.”⁵. The authentic and urban folklore are the materials that he uses through processing, harmonization, each time constructing and reconstructing, through his own language elements, the atmosphere suggested by the lyrics: inspired melodic lines supported by the real rhythm of the folk genres, specific ornaments, surprising modulations, often at farther sequences.

We mention some of his works known and interpreted, without minimizing the value of the unnamed ones: *Lieder and songs*, four notebooks, (1889) composed in Leipzig; *Songs for voice and piano*, with Romanian and German text, six notebooks (1930) (*A wolf came from the thicket, Why don't you come to me, O, what a wonderful news !, Lord, Jesus Christ*); *Collection of lieder by Romanian composers* (1967); *The charming horn*, for three equal

⁵ Cosma, Viorel. 1999. *Musicians from Romania. Lexicon*. Vol. II, Bucharest: Musical Publishing House, p. 190.

voices; *3 Folk carols* (1888), for mixed / male choir; *Old Romanian folk chants and songs*, for mixed choir, I-X books; *The liturgy of St. John Chrysostom*, (1985), for the male choir; *The mother of Stephen the Great* (1884, ballad for bass, mezzo-soprano, mixed choir and piano / orchestra, lyrics by D. Bolintineanu. Concerned with the promotion of the cult and popular music, G. Dima proved a strong attitude in promoting the characteristics of music through the didactic literature, *Elementary singing course for the use of middle schools* (1910), through musicology studies: *What to do in the first line to improve the musical state of our people* (1898).

The lied model of the composer Gheorghe Dima is similar to the madrigal genre, being often called the creator of the Romanian madrigal. Joining the two terms, madrigal and Romanian, is fair, because the madrigal itself is a laic genre, from the Renaissance period, which, through its polyphonic writing and the alternation of two distinct sections, contrasting thematically and intonationally, couplet and *ritornello*, often develops a lyric of folkloric inspiration. Thus, G. Dima reveals in his lied creation, particular musical techniques, melodic lines laced with popular insertions, rhythms that always support the expressiveness of the Romanian melos, the alternation between the polyphonic and the homophonic syntax.

The work that we will submit to analysis, in order to reveal a few elements of the composer's language is the lied *Today is snowing*, verses written by V. Alecsandri. The song, designed for four voices, for a mixed band: soprano, alto, tenor and bass, is special through the duality of the composition elements which emphasize the transparency and fluidity of a winter day. Thus, it is the structure of a madrigal, couplet-*ritornello*, comprising two stanzas. This is also the reason for the alternation of the two tonalities in the two distinct sections, which are in homonymous relation: do minor-Do major. Also, the tempos chosen in successive comeback, *Adagio* (Couplet) and *Più mosso* (*Ritornello*), as well as the frequency of nuances and terms of agogics, were thought in order to suggest the quiet atmosphere of the snow but also the joy of the white, covering as *a silver armour, the proud country*. The same alternative change is found in the thinking of the composer who conceived the work in polyphonic syntax, as a reflection of the writing of the Renaissance genre, only in the starting phrase of each section, following and then enriching in the following sentences, with expressive harmonies, through the chromatics that often delay the solutions, or through the secondary steps. Only the binary composite metric, 4/4, is constant throughout the work, outlining the constancy of the winter landscape. Responding to the verses of the poet V. Alecsandri, of a real pictorial chromatism, Gh. Dima's music, like the translucent snow, surprises through unique harmonic solutions, a true science of concatenations.

The first couplet has three phrases (m. 1-4, m. 5-8, m. 9-11) that support the modernity of the song, by their asymmetry. The voices enter a polyphonic speech, in descending direction, from soprano to bass, through the same rhythmic formula, which suggests the fall of snowflakes. From the second measure, we notice the dissonance of a small second, which is immediately solved, but, in the third measure, the composer continues with the second step with a seventh in the third restoration, II 4/3, continuing with the first step, with the great third, with the dominant ninth. The harmonic language, intensely coloured, outlines the great melodicity of this first sentence and of the whole section:

Adagio
pp

S. Zi-ua nin-ge, noap tea nin - ge, di mi-

A. Zi-ua nin-ge, noap tea nin - ge, di mi-

T. Zi-ua ninge, noap - tea nin

B. Zi-ua ninge, noap - tea

Fig. 1 (măsurile 1-5)

The second section is another model of polyphonic construction, this time in an ascending direction, like the progressive vibration of joy that encompasses us in front of a white winter landscape. The section has four phrases, this time strictly delimited, without intersections, as in the couplet: f1 m. 12-15, f2 m. 16-19, f3 m. 20-24, f4 m. 25-28:

Più mosso
p crescendo

S. Cu o za-le ar-gin-ti-e se îm-bră-că mîndra țară, cu o za - le, cu o cre - scen - do

A. Cu o za-le se îm bra - că mîndra țară, cu o za - le do

T. Cu o za-le se îm-bră-că mîndra țară, cu o za - le do

B. se îm-bră-că mîndra țară, cu o za - le ar

Fig. 2 (măsurile 12-18)

The second phrase (m.16-19) surprises through a brief modulatory inflection, towards the major Fa, measures 16-17. But the return to the Do major tone, gives the composer the possibility to consider the third phrase as a short development, by the chain of step IV / 6, in the first restoration, with the 1st step, then with I, by the 6-5 slip, even step V with seventh, in the first restoration:

S. za - le ar - gin - ti - e se îm - bra - că

A. za - le ar - gin ti - e se îm - bra - că

T. za - le ar - gin ti - e se îm - bra - că

B. gin - ti - e se îm - bra - că

Fig. 3 (măsurile 19-24)

Starting with measures 23-24, the composer prepares for the final phrase, through the melodic line of the bass that goes to the 5th step. The fourth phrase is a suspension route, through the persistence of the 5th step, with a seventh, with a dominant ninth, with its substitute, step II7, with a seventh, so that the last consonance will be again of the dominant, elliptical of sequence, with a large seventh. It is the specific semi-cadence:

The image shows a musical score for measures 25-28. It consists of four staves. The top two staves are vocal lines, and the bottom two are piano accompaniment. The lyrics are: "di - mi - nuendo min - dra, min - dra fa - ră". The music features a semi-cadence in the bass line.

Fig. 4 (măsurile 25-28)

The third section, the second couplet is identical to the first, finding the difference in the level of the lyrics, as expressive and suggestive: *The round and pale sun, is foreseen among the clouds.*

Also, the fourth section, *ritornello* II, is identified with the first, the only difference being in the last two measures, where the composer enchains the steps II7, III6, I5, in the hue of *ppp*, on the suggestive phrase *like a dream*:

The image shows a musical score for measures 50-56. It consists of four staves. The top two staves are vocal lines, and the bottom two are piano accompaniment. The lyrics are: "vis de ti - ne - re - fe ca un vis, ca un vis.". The score includes dynamic markings like *rit.* and *ppp*.

Fig. 5 (măsurile 50-56)

Iacob Mureșianu (1857-1917) belonged to the generation of precursor composers, those who by their musical creation, contributed to the coagulation of a national spirit. Remarkable intellectual, Iacob Mureșianu was raised in a refined, artistic and spiritual family environment: his father, Iacob Mureșianu was writer, publicist teacher, director of *Gazeta Transilvaniei* magazine, his mother was a piano teacher, his brother Traian was sculptor and singer, and his sisters Sevastia and Elena were musicians. In this artistic ambience, Iacob himself began to study the voice and the piano.

However, “As we know from all the biographical data about the composer, his parents wanted to prepare him for the engineering career.”⁶

Thus, he attended the courses of the Polytechnic University in Vienna in order to become an engineer. However, feeling his true vocation for music, I. Mureșianu interrupted his technical studies, applying in 1879 at the *Königliches Conservatorium der Musik* in Leipzig. Thus, from then on, prolific years would come in which he would compose, conduct important choral ensembles from Transylvania, Blaj, Brașov, he would also write, founding also the magazine *Musa Română* (1888), teach and militate in favour of the Romanian and universal musical culture.

I. Mureșianu's intention to set up “*the first music magazine in Transylvania - Romanian Muse* -”⁷) followed naturally the tradition of his family, of his father, to orient himself towards the penetration, revelation and cultivation of the universal musical heritage, and especially of the Romanian heritage. In his research, the musicologist Mihail Cozmei states that “I. Mureșianu's magazine often included musical scores such as potpourri, improvisation, fantasy, capriccio on Romanian folk or romance themes, but also ballroom dancing (polka, mazurka, waltz, often grounded on Romanian themes), intended for the piano, an instrument with a wide spread in the society of the time.”⁸

His musical creation is comprehensive, combining genres of musical classicism always completed by the reflexes of the Romanian folk songs. Being a precursor of the Enescian generation, he outlined a new perspective, bringing near the Romanian symphonic music to the occidental one, through an overture like *Stephen the Great*, as well as in the genre of vocal-symphonic music, where “We can consider Iacob Mureșianu, as the first oratory author”⁹, *The Chimera* (1893). All the other broad genres of his creation are emanations of a real patriotic consciousness expressed through suggestions of the popular melos, in tonal harmonies, just like his generation: the ballad *Argeș Monastery* (1884), the operetta *Millo director* (1910), the vaudevilles *Cinel-cinel*, *The cat's stairs*, *Rustic wedding* and so on. Also the chamber-instrumental creation, even if not extended, is significant through the melodic and tonal substantiality, always suggesting marks of the Romanian folk song, without resorting to quotes: some lieder for voice and piano, and, the creation for the piano “which includes over one hundred works, many of which were lost.”¹⁰

However, he proved the highest and true maturity in the coral genre. As conductor of several choral ensembles, *the Singing and Music Reunion in Năsăud* (1878-1880) in Brasov and Blaj, he acknowledged the expression potential of the voices of children, women and men. His creations reveal a gradual and continuous elevation of the musical language which is within the sphere of the tonal intonational system, with expressive musical themes, often collected and processed in the spirit of the folkloric music: *Flower on the field*, *Doină, doină (folk song)*, *Sweet song*, *Neică, neiculiță (Uncle, uncle)* and so on. The choral repertoire of the religious music complements the laic one, through the detailed elements conferred to each thematic development, through the depth of the harmonic chains, those that outline the spiritual framework: *Cheruvic*, *Priceasna (Hymn)*, *The eye of the heart*, for 12 voices, *How many for Christ* and so on.

Ștefan Niculescu (1927-2008) was a referential personality of the Romanian musical culture, which through his sonorous and musicological creation contributed to changing the perspective of the second half of the twentieth century. Highlighting the correlation between his sensitivity and practical intelligence, Ștefan Niculescu studied the piano at the *Royal*

⁶ Rucsanda, Mădălina, Dana. 2014. *Iacob Mureșianu*, Craiova: Universitaria Publishing House, p. 22.

⁷ Cozmei, Mihail. 2012. *Teodor T. Burada: un întemeietor*, Iași; Editura Artes, p. 127.

⁸ Cozmei, Mihail. 2012. *Teodor T. Burada: un întemeietor*, Iași; Editura Arte, p. 127.

⁹ Rucsanda, Mădălina, Dana. 2014. *Iacob Mureșianu*, Craiova: Universitaria Publishing House, p. 107.

¹⁰ Rucsanda, Mădălina, Dana. 2014. *Iacob Mureșianu*, Craiova: Universitaria Publishing House, p. 79.

Academy of Music in Bucharest (1941-1946). During the years 1946-1950, he attended the Institute of Civil and Industrial Constructions, Bucharest, becoming construction engineer and practicing for a brief period that job. But, his return to the field of music ensured his professional achievement, first as composer, then in his teaching and musicological career.

His musical creation, 65 musical compositions, is appreciated nationally and internationally and has as psychology, the aesthetic of the beautiful in the mirror of mathematics. His intelligence, both mathematical and musical, proved by ability, spontaneity, creative fantasy, rigour, precision, helped him build an impressive, multi-layered work. The key to the originality of his creation is theorizing musical concepts in permanent harmony with his musical creation. Thus, everything he theorized, he also expressed in the sound area. For instance, we find in his creation concepts such as heterophony, sound colour, accompaniment, or synchrony, about which Cornel Georgescu explains << the procedure called by Ștefan Niculescu “synchrony”, in which a repetitive polyphony gradually becomes unison. (That process was a constant concern of the composer. There are no less than four compositions named as follows: Synchrony I, 1979, II, 1981, III, 1985 and IV, 1987). In each of the latter cases quoted - collage or graded evolution - the special form of the relation between two known syntactic categories generates a new, distinct syntax.>>¹¹

At the beginning of his creation, through his nonconformist attitude in assimilating the modern aesthetics, being involved in the actions of the avant-garde generation, his creation approached the serialism, which he reconfigured through the spectrum of melos and Romanian modalism. << The chance of Ștefan Niculescu to discover a Romanian variant of serialism, for example by using the modalism of the folkloric source to reach those unique combinations of serialism and modalism, has substantially increased our creator's faster position among the masters of the new wave of “avant-garde” of the end of the 20th century.>>¹²

Then, during his creative maturity, asked about his personal opinion on the period of intense metamorphosis of the late 20th century and the beginning of the 21st century, which some musicians called postmodernism, Ștefan Niculescu said that “Tending towards a new universal or planetary grammar - the only way to true communication - requires a pluralistic vision which balances the different antagonistic, monistic and reductionist directions through musical thinking. It is kind of a reunion of opposites,...”¹³

Thus, his musical thinking led him, confirming his belonging to postmodernism, through research and capitalization of the universal creation, but especially of the Enescian one, to identifying the fourth syntactic category in musical practice, along with the other three: monody, polyphony, homophony, heterophony. Laura Manolache captures the idea that “According to Niculescu’s conception on musical syntax, **heterophony** is along with monody, polyphony and homophony, a fourth distinct pattern of ordering, on the temporal axis, the vocabulary elements.”¹⁴ (Manolache, L. 2002, p. 162): *Heteromorphism*, for large orchestra (1967), *Formants*, for chords with or without other instruments (1968).

The accompaniment, an element of Byzantine music, being equally sign, intonation and prayer, is a “long held sound (gr. isokratema, eng. drone) which can also be envisaged as a repetition of the same sound. The accompaniment and the psaltic song are developed forms of prayer”¹⁵. The accompaniment, as constitutive element of the monody, in the creation of

¹¹ Georgescu, C. *The musical syntactic categories according to Ștefan Niculescu. New contexts and perspectives*, in the Music Magazine, no. 2/2017, p. 39.

¹² Cosma, Viorel. 2004. *Musicians from Romania. Lexicon*. Vol. VII, Bucharest: Musical Publishing House, p. 123

¹³ Sandu-Dediu, V. 2004. *New music between modern and postmodern*, Bucharest: Musical Publishing House, p. 278.

¹⁴ Manolache, Laura. 2002. *Six portraits of Romanian composers*, Bucharest: Musical Publishing House, p. 162.

¹⁵ Teodoreanu, Nicolae. *The Accompaniment in the tradition of psaltic music in Romania*, in MUZICA Magazine, no. 3/2017, p. 70.

Ștefan Niculescu is integrated into other syntaxes, polyphony, homophony, heterophony: *Accompaniment I*, for orchestra (1970), *Accompaniment II*, for large orchestra (1971).

The musical genre, which is a concept that is integrated into a precise category, that of works with similar musical content, is reconfigured by the composer. The flexibility of his musical thinking determined him to compile between structures already organized, as in *Invocatio* (1989), choral symphony for 12 voices.

His very creation of musicology proves the rigorous spirit of the mathematician concerned with music, deepening concepts, structures, tendencies. The detailed research, the analysis with references of the compositional language that he mastered, gave musical depth to each work: *About time as a dimension of music* (1968), *Heterophony* (1969), *Phenomenological analysis of the fundamental types of sound phenomena and their relationships with heterophony* (1972), *A theory of musical syntax* (1973), *Music in today's churches* (1994) and so on.

3. Conclusions

As part of this study, we have approached aspects of originality in the creation of several musicians, themselves original through their dual competence, of musician and engineer dominated by the mathematical, logical thinking and the rational spirit. The invention, reform or non-conformity in the musical concepts are constant attitudes demonstrated in the creation of the mentioned ones. Each of the musicians with a technical-engineering background developed various musical hypostases of instrumentalists, conductors, composers, musicologists, and which, in the historical moment lived, allowed the legitimation of innovative attitudes, concepts, tendencies.

T. T Burada is considered to be the founder of Romanian musicology, laying the foundations of scientific research by collecting, processing, capitalizing the musical information, through the elements of history, aesthetics, philosophy, which support the musical data. We also owe him the first folk monograph *A Trip to Dobrogea* (1880), also revealing a precise methodology of scientific research. He remains in the Romanian musical culture an erudite intellectual who proved disciplined attitudes in the intense work of archivist, by paying attention to details, of investigation, research of personalities, instruments, institutions, eras.

Iacob Mureșianu was a promoter of the Romanian symphony, becoming the first creator of the Romanian overture genre. Also, we owe him the initiative to have supported and allowed the presence of female voices in the Holy Liturgy, “thus preceding, with 17 years the similar reform of Musiescu, in the ensemble of the choir of the Metropolitan church of Iasi, in 1895.”¹⁶

Gheorghe Dima is another complex personality who developed and carried out through his passion for music correlated with the concrete and organized thinking of the mathematician, in the second half of the 19th century, an intense musical activity in the three important cities of Transylvania: Brașov, Cluj and Sibiu. Equally important is his dimension as creator of the Romanian madrigal, in which we are revealed the sound means specific to his language, original developments of the counterpoint science with the harmonic ones, put at the service of enhancing the Romanian ethos of the urban folklore.

Ștefan Niculescu was the artistic personality with original manifestations in the compositional, musicological and pedagogical creations. The concrete part of his musical thinking constantly led him to innovations and mathematical-musical compilations, giving new meanings to the musical language. His works establish and exploit concepts such as

¹⁶ Rucsanda, Mădălina, Dana. 2014. *Iacob Mureșianu*, Craiova: Universitaria Publishing House, p. 23.

heterophony, accompaniment, structure, colour, by rigorous mathematical languages which have an accentuated emotional load. The encrypted message of sacredness is felt and sustained even by the composer: “The sacred is the supreme target of music which tends towards the sacred even when it is profane or when it forgets its destiny of serving it”.¹⁷

The creative dimension of the three musicians has reverberations of universality also due to the solidity of the musical science always modelled by the rigour of the mathematical intelligence.

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¹⁷ Sandu-Dediu, V. 2004. *New music between modern and postmodern*, Bucharest: Musical Publishing House, p. 222.