*From Autodidactics to Electronics: The* *Parallels Between the Poetics of Edgard Varèse (1883–1965) and Josip Slavenski (1896–1955)[[1]](#footnote-1)*

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***Introduction***

Considered to be some of the leading avant-garde thinkers of their time in their respective environments, Josip Slavenski (1896‒1955) and Edgard Varèse (1883‒1965) had much in common in their approach to composition, despite never meeting or even knowing of each other’s work. The aim of this essay is to understand how these two composers, separated by country, culture, musical heritage, language and personal background, still shared, and carried out in their own ways the dream of *liberating sound* from confines of centuries-old Western traditions. To uncover the nucleus of their shared creative code, I first address the dominant atmosphere of the inter-war period in Europe and the United States of America, and, second, I examine certain coincidental similarities between the composers’ early years. The main body of the essay will then be focused on observing and comparing the results of such influences in the composers’ words and music.

***Historical context***

To understand the connection between the creative spirits of Slavenski and Varèse, it is first important to familiarize oneself with the general context of the time period between the two World Wars, when both composers wrote their pivotal works.[[2]](#footnote-2) Both Slavenski and Varèse lived in an age marked by turbulent and volatile social and political circumstances, in two vastly different states which, still, almost simultaneously went through extremely important constitutive periods of their respective histories. From the second to the fifth decade of the 20th century, both the Kingdom of Yugoslavia[[3]](#footnote-3) and the USA went through a similar process of fast urbanization adopting the newest technological advances, gradually developing industry and gaining stable economic power. [[4]](#footnote-4) The focus on rapid modernization of the countries they lived in had an unmistakable impact on both composers' work, which was directed towards a specific, projected ideal of 'music of the future'. Such music, they predicted, would be liberated from any existing tradition, paving new paths and bowing only to the composer’s imagination.[[5]](#footnote-5) The ideology of constant progress marking their work and thought designates Slavenski and Varèse as paradigmatic modernist composers, both imagining themselves at the forefront of music’s endless evolution. But this desire to break away and start anew cannot be considered only a product of the *spiritus movens* of the composers’ times; specific, key biographical points must be brought to the fore.

***Autodidactism: a prerequisite of originality?***

During their lifetime, as has been already mentioned, both composers were considered to be unique within the parameters of their respective musical 'societies'. Even after they became, at a later age, professors of composition, they did not nurture a certain, strict school of composing, but encouraged their students to develop their own means of expression. Slavenski, although aware his compositions presented a singular voice on the Yugoslavian music scene, did not appear to have the need to further pursue this issue: "Which style I belong to - I never thought very much about it. But I believe this question was best answered by a critic from Frankfurt, back in 1929: 'Slavenski is a musician of his own style'."[[6]](#footnote-6) On the other hand, Varèse had a strong need to separate himself from all other contemporary schools of composition, and proclaim his independence.[[7]](#footnote-7)

The fact that both composers had such a markedly unique way of musical expression in their own respective surroundings, could be associated with them being musical autodidacts, who began their traditional music education comparatively late in their lives.[[8]](#footnote-8) There exist very clear indications, both in their music and their words, that when they started their more systematic music education, they had already developed a kind of conscious, or subconscious hostility toward certain musical traditions. When it comes to Varèse, destructive tendencies toward tradition became his verified motto, which he often repeated: through written word, in interviews, or in his musical works. The avant-garde composer claimed that this wish to break off with tradition characterized even his earliest musical experiences, reaching back to his childhood: “I detested the piano and all conventional instruments, and when I first learned the scales, my only reaction was ‘Well, they all sound alike’.”[[9]](#footnote-9)

Slavenski was not equally disdainful, but his compositions do contain a certain enmity toward traditional, especially well-tempered instruments, of which, of course, his relationship with the piano is paradigmatic.[[10]](#footnote-10) However, Slavenski's position had been determined more by the circumstances of his early years, rather than his 'revolutionary nature'; because of the non-existence of the piano in the tiny village of Čakovec, Croatia, where he grew up, the composer came to know music first and foremost through the sounds of folk songs, the church bells and organ, and his father’s zither.[[11]](#footnote-11) These were the sounds which marked Slavenski's childhood and which he always searched for, over and over, within the range of more traditional instruments. The particularities of one composer’s personality and circumstances of the other’s childhood, focused the attention of both on exploring music outside of more traditional systems and practices. This attention would, paired with the ambitions of the progressive spirit of their times, later in life lead both down a path of persistent musical innovation, influencing, in part, their common goal of uniting scientific thought with the art of music.

***The connection of music and natural sciences***

Slavenski and Varèse both nurtured a keen interest in physics and astronomy, which manifested itself in their creative work. Both composers had, in fact, according to these interests, developed a specific view on music as a spatial phenomenon, which fundamentally transformed their approach to composing. Both have, also, left behind a significant number of written documents, in which they pondered on the possible meeting points of music and natural sciences. When it comes to Slavenski, his thoughts on 'astro-acoustics' are well known today, owing to the work of musicologist Vlastimir Peričić.[[12]](#footnote-12) According to Peričić's research, Slavenski had been developing theories on multiple possible points of contact between the natural sciences and the art of music. The main points of the composer's interest were: transforming circumferences of planetary orbits into intervals; assigning each planet in the Solar system its own Ür-pitch; building scales out of these astrological measurements; then, studying the analogies between the periodic table and overtones, and parallels between structures of chords, atoms and molecules; attempts to jot down the register of infra- and ultra-sound.[[13]](#footnote-13)Slavenski's thoughts on the nature of the relationship between music and science could best be summed in the words of the composer himself:

"Everything is music! The entirety of life, as well as the life of an atom and the cosmos, is a constant movement in waves, between the micro-cosmos and the macro-cosmos, ie. between quintillion vibrations (cosmic rays) and quintillion seconds (the age of the cosmos). Musically put: life is a constant vibrant movement between upper and lower harmonics."[[14]](#footnote-14)

The way these thoughts, somewhat scholarly yet mostly poetical, manifested in Slavenski’s musical work was often subtle and mostly unnoticeable, remaining the composer’s personal preoccupation. Yet there is one example that must be mentioned: frequent use of tone clusters, featured at the very beginnings or endings of many of his compositions[[15]](#footnote-15), echoed the composer’s view of the creation of the Universe from the Big Bang. Treating tone clusters as the musical equivalent of the grand explosion from which all matter in the cosmos came to be, Slavenski presented them as the nucleus of all music which would follow.

Unlike Slavenski, who readily described himself as nothing more than a passionate amateur[[16]](#footnote-16), Edgard Varèse was better acquainted with several areas of natural sciences, partially because of his family's history – his father being an engineer himself – and partially because of his own education at the Technical Institute, as well as later studies in Paris.[[17]](#footnote-17) A keen interest in science, which he had his whole life, shaped not only his approach to music composition but also the language surrounding it. Varèse had, in fact, developed a brand-new glossary of composition, filled with terms borrowed from fields of mineralogy, mathematics, physics and astronomy. He began this process by re-defining music itself, presenting it as a spatial phenomenon, ie. as "bodies of intelligent sounds moving freely in space."[[18]](#footnote-18) Then, he expanded the language as to apply it to structures and elements of his works. To signify linear layers of musical texture, he employed the mathematical term *planes.* When speaking about vertical structures, he would avoid the term *chords,* and talked instead of *sound masses.* For the characteristic way he 'built' his works, developing them from a small melodical-rhythmical nucleus usually presented at the very beginning, he employed the term *crystallization.* This vocabulary was soon adopted in musicological and theoretical written word, even when speaking about works of other contemporary composers, and its use in papers on Slavenski's music is noticeable. The similarities in the two quotations present below, the first being Varese's own words about his vision for his music, and the second taken from a study on Slavenski's orchestral works, for example, are striking:

"... the movement of sound-masses, of shifting planes, will be clearly perceived in my work, taking the place of the linear counterpoint. When these sound-masses collide, the phenomena of penetration or repulsion will seem to occur. Certain transmutations taking place on certain planes will seem to be projected on other planes, moving at different speeds and at different angles." [[19]](#footnote-19)

"The core of the piece consists of a gradual growth of volume (with occasional digressions), movement and build-up of 'sound' structures, their binding and disjunction, collisions, and, as results of those collisions – 'particles', which break apart in every possible direction of sound expansion."[[20]](#footnote-20)

The language used in these quotations illustrates Slavenski and Varèse’s common approach to composition, best described as constructing the music ‘from the ground up’, through working with primarily vertical layers: gradually assembling and superimposing multiple rhythmic and melodic ostinatos. This approach, as we have seen, stemmed from the composers’ observations of the natural world and their fascination with sound as, primarily, a physical phenomenon, considering and utilizing not only its aural aspect but also its spatial potentials.

***Early interest in electronic music***

 The two composers' explorations of sound as a natural phenomenon, and their wish to discover entire new possible sonic fields, led them, finally, to one of the great frontiers of 20th century composition: electronic music. Even though it was to flourish mid-century, both Slavenski and Varèse thought and spoke about the concept decades before the fact. Yet, in their opus, disproportionate to the amount they wrote about the issue, there exist only a few works of the ‘truly’ electronic kind. For Slavenski, the year 1937 is crucial in this regard, when the periodical *Muzički glasnik* (*Musical Messenger*) published his article entitled “Electrical Instruments”, in which the composer articulated that the function and goal of these new instruments were to create *entirely new colours of sound.*[[21]](#footnote-21) That same year, Slavenski wrote *Music for the natural tonal system,* a work intended for the Bosanquet harmonium[[22]](#footnote-22), four trautoniums[[23]](#footnote-23), and three kettledrums. Sketches for Slavenski's greatest unfinished work, the *Mysterium,* also show that the instrumentation of the piece included an 'aliquotophone' (*alikvotofon*), an unknown instrument whose construction, history and possibilities remain a mystery. Nevertheless, Vesna Mikić stresses the importance of the few completed fragments of the *Mysterium* project as music which, through traditional, acoustic means of expression, achieves a specific quality of sound comparable to electronic music, pointing out once again Slavenski’s predisposition toward searching for a special new kind of sound within and through whatever resources available.[[24]](#footnote-24) However, after World War II in Yugoslavia, seeing as the composer was in neither economic nor political circumstances to continue his sound experiments, he turned to writing music more suited to his current surroundings, and, apparently, lost interest in composing works either in the electronic spirit*,* or directly for such novelty instruments.[[25]](#footnote-25) And, as with many Yugoslavian composers of his generation, the change in thought in the post-war period, his more mature age and new official position of authority as professor of composition at the Academy, may have also been influential in Slavenski’s gradual abandonment of avant-garde musical expression in general.[[26]](#footnote-26)

Varèse's life had been, on the other hand, marked by a permanent search for the right conditions in which he could work with instruments that would enable him to escape both the limitations of the human body and the range of acoustic instruments.[[27]](#footnote-27) Similarly to Slavenski, he had already opened up new musical horizons during the twenties, in his works for traditional instruments, such as *Hyperprism* (1922–23)*, Intégrales* (1924–25), and *Ionisation* (1929–31). According to Varèse's former student Chou Wen-chung, “these instrumental works of his are not merely 'electronic' in *sound*, as has been pointed out, but more significantly, 'electronic' in *concept*.”[[28]](#footnote-28) Not satisfied, however, to remain electronic only in concept, Varèse reached out persistently to various laboratories and applied for fellowships in hopes of realizing his dream of an electrician’s and composer’s fortuitous union. Unfortunately, this work was at last made possible when the composer's was already in his eighth decade, enabling him to create his three last, great pieces.

***Conclusion***

Having brought to light some of the major parallel points of the two composers' persons – societal, biographical, poetical and aesthetical – we notice that the first significant coincidence between the two is located at the very beginning of their connection to music: their autodidactism. It is not, therefore, very surprising to see how Slavenski's and Varèse's creative processes developed similarly, being in a certain way conditioned by their childhoods. The unrestricted ways of their early, self-guided expeditions and discoveries led to what I believe to be the composers’ most significant common characteristic – the preference for *sound* over *music.* The dominant liberal spirit of their age drove both on a journey to free sound from what they believed to be its restrictions, escaping limitations of any established musical tradition, be it in terms of genre, choice of instrument, equal temperament, tonal system etc. This liberation of sound *from* music, or, in other words, believing all sound *is* music, would become central to the work of the next generation, mid-century avant-garde, ranging from Cage to Ligeti.

It is the hope of the author that this essay sparks a further interest in the connections of Slavenski and Varese. The interest in the work of both, having gone through a significant renaissance in recent decades, still leaves much unexamined in terms of their influence on the later development of composition in the 20th century. This intriguing subject, sufficiently studied, has the potential to re-define the stature of the two composers, even today most often thought in terms of outliers of their own time. Special consideration should be given to the spirit of their era and their environments, in order to understand how could such a similar creative code exist between two composers separated by so many circumstances, yet, on a deeper level, profoundly connected as well.

**References:**

1. Anderson, John D, Varèse and the Lyricism of the New Physics, *The Musical Quarterly*, Vol. 75, No. 1 (Spring, 1991), 31–49.

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1. Griffiths, Paul, *Modern Music: A Concise History from Debussy to Boulez,* London & New York, Thames and Hudson, 1986.
2. Grujić, Sanja, *Orkestarska muzika Josipa Slavenskog,* Udruženje kompozitora Srbije, Beograd, 1984.
3. Mikić, Vesna, Josip Slavenski i ’astroakustika’ – u susret novom zvuku, in: M. S. Dimitrijević (ed.), *Razvoj astronomije u Srba IV,* 2006.
4. Midžić, Seadeta, Klavirska djela Josipa Slavenskog, *Zvuk*, 81, 1986, 12–43.
5. Peričić, Vlastimir, Josip Slavenski i njegova 'astroakustika', *Zvuk,* 4, 1984, 5‒14.
6. Schuller, Gunther and Edgard Varèse, Conversation with Varèse, *Perspectives of New Music*, Vol. 3, No. 2 (Spring - Summer, 1965), 32–37.
7. Slavenski, Milana, *Josip*, MŠ "Josip Slavenski", SOKOJ, Beograd, 2006.
8. Varèse, Edgard, and Chou Wen-chung, The Liberation of Sound, *Perspectives of New Music*, Vol. 5, No. 1 (Autumn - Winter, 1966), 11–19.
9. Wen-chung, Chou, Varèse: a sketch of the man and his music, *The Musical Quarterly*, April 1966, 151–170.
1. This essay was originally written in 2017 as part of the course General History of Music – Contemporary Music 2, which centered on the European musical avant-garde during the 20th century. The course was held by Prof. Dr. Dragana Stojanović-Novičić at the Faculty of Music in Belgrade. This presents a more developed and detailed version of that essay. [↑](#footnote-ref-1)
2. With the exception of Varèse's three compositions ‒ *Déserts* (1950–1954), *Poème électronique* (1957–1958), and *Nocturnal* (1961) ‒ which came to be only when the composer was technologically enabled to create them, at the end of the fifties. [↑](#footnote-ref-2)
3. For the purpose of this essay the state title of Kingdom of Yugoslavia (established in 1929) will be used. The state, formed in 1918, was, however, for its first decade known as the Kingdom of Serbs, Croats and Slovenes. [↑](#footnote-ref-3)
4. It is important to note that many leading countries of Europe at the time had already undertaken this process, as events such as the Industrial and French revolution spurned them into motion. The United States, too, became one of the fastest growing world powers in the economic and industrial sense of the word in the second half of the 19th century – however, the Great Depression put a stop to this momentum, leaving USA, for a short period of time, in a tumultuous state similar to that of Kingdom of Yugoslavia post-World War I. [↑](#footnote-ref-4)
5. Varèse had been, much more explicitly than Slavenski, a great proponent of this idea, considering it to be a major part of his life’s work. See: Edgard Varèse and Chou Wen-chung, The Liberation of Sound, *Perspectives of New Music*, Vol. 5, No. 1 (Autumn - Winter, 1966), 11–19. [↑](#footnote-ref-5)
6. Josip Slavenski, in: Milana Slavenski, *Josip*, MŠ "Josip Slavenski", SOKOJ, Beograd, 2006, 7. [↑](#footnote-ref-6)
7. Varèse observed, with equal disapproval, the postulates of the futurists, dada, neo-classicalists, serialists, and others. See in: Chou Wen-chung, Varèse: a sketch of the man and his music, *The Musical Quarterly*, April 1966, 156. [↑](#footnote-ref-7)
8. Coming from such times when familial needs and wishes were to be respected more than one’s own, both men had waited an infamously long amount of time before properly beginning their musical education and subsequent careers. Slavenski worked on and off in his family’s village bakery until the age of 24, when he won a scholarship for the Prague Conservatory, and Varèse studied engineering, obeying the wishes of his ‘tyrannical’ father, later leaving only after the death of his mother at the age of 19. Milana Slavenski, op. cit, 169; Chou Wen-chung, op. cit, 151. [↑](#footnote-ref-8)
9. Gunther Schuller and Edgard Varèse, Conversation with Varèse, *Perspectives of New Music*, Vol. 3, No. 2 (Spring - Summer, 1965), 32. [↑](#footnote-ref-9)
10. “Josip Slavenski's piano works in the local literature of that age were, in a truly remarkable and wholly revolutionary fashion, not piano music but music for the piano; the instrument is rarely the beginning of inspiration but just an unavoidable means of expression, and the musical thought never grows from it, but is completely foreign to its nature. Slavenski seems never to think about the piano's specific possibilities, or its character; rather, he almost always disregards it, forcing the instrument to become a voice, a choir, some other instrument or a whole orchestra. This is why many of his compositions, especially those from earlier collections, and any directly connected to folklore, seem like ideas that are just for the present moment sketched for the piano, and it appears as if that sound, so completely foreign to the instrument, could any minute free itself from the piano and break off somewhere.” Seadeta Midžić, Klavirska djela Josipa Slavenskog, *Zvuk*, 81, 1986, 42. [↑](#footnote-ref-10)
11. Bojan Bujić, Slavenski [Stolzer, Štolcer, Štolcer-Slavenski], Josip, in: *New Grove Dictionary of Music and Musicians,* electronic edition, acc. 05/12/2018. [↑](#footnote-ref-11)
12. Vlastimir Peričić, Josip Slavenski i njegova 'astroakustika', *Zvuk,* 4, 1984, 5‒14. [↑](#footnote-ref-12)
13. More in: Ibid. [↑](#footnote-ref-13)
14. Josip Slavenski, see in: Vlastimir Peričić, op. cit, 5. [↑](#footnote-ref-14)
15. Tone clusters appear, for instance, at the beginnings of his Violin concerto (1927), *Balkanophonia* (1927), the sixth movement (entitled ’Music’) of *Religiophonia* (1934), and the very end of *Chaos* (1918–32). [↑](#footnote-ref-15)
16. „I have no scientific ambitions – I am but a follower of that most glorious science: **astronomy,** and as a composer of music, through my fantasy I redeem my knowledge for the good of mankind.“ Josip Slavenski, in: Vlastimir Peričić, op. cit, 7. [↑](#footnote-ref-16)
17. Simultaneously with his studies of composition, Varèse attended lectures on mathematics and science at the *Ecole Polytechnique*. John D. Anderson, Varèse and the Lyricism of the New Physics, *The Musical Quarterly*, Vol. 75, No. 1 (Spring, 1991), 36. [↑](#footnote-ref-17)
18. Edgard Varèse, in: John D. Anderson, op. cit, 33. [↑](#footnote-ref-18)
19. Ibid, 35. [↑](#footnote-ref-19)
20. Sanja Grujić, *Orkestarska muzika Josipa Slavenskog,* Udruženje kompozitora Srbije, Beograd, 1984, 184. [↑](#footnote-ref-20)
21. Milana Slavenski, op. cit, 134. [↑](#footnote-ref-21)
22. Robert Bosanquet (1841–1912) was an English scientist, composer and music theorist, whose primary interest were acoustics, electro-magnetics and astronomy. He constructed the above-mentioned instrument in 1876, calling it an "Enharmonic Harmonium". The most important characteristic of the Bosanquet harmonium is the expansion of the traditional Western well-tempered system, in which an octave is made up of 12 tones, into a system in which an octave consists of 84 tones, with the keyboard range of four and half octaves. [↑](#footnote-ref-22)
23. Trautonium is a monophonic electronic musical instrument, invented in 1929 in Berlin, by Friedrich Trautwein (1888–1956). Instead of a keyboard, its manual consists of resistor wire over a metal plate, pressed down in order to create sound. Expressive playing was achieved by gliding a finger over the wire to create small vibrations, and the volume was adjusted by the pressure of the finger. [↑](#footnote-ref-23)
24. Vesna Mikić, Josip Slavenski i ’astroakustika’ – u susret novom zvuku, in: M. S. Dimitrijević (ed.), *Razvoj astronomije u Srba IV,* 2006, 639. [↑](#footnote-ref-24)
25. After World War II Slavenski’s creative output significantly lessened, and the music he wrote became oriented toward matters of nation and state, consisting mostly of mass songs (such as *Pesma omladini, Da nam živi rad, Udarnička*) and film scores. Milana Slavenski, op. cit, 149. [↑](#footnote-ref-25)
26. Other notable Yugoslavian composers who followed the same creative path from explosive and provocative avant-garde practices of their youth in the prosperous and cosmopolitan inter-war zeitgeist, to neoclassicism and social realism after World War II, were Ljubica Marić (1909–2003) and Stanojlo Rajičić (1910–2000). [↑](#footnote-ref-26)
27. The opportunity to cite one of Varèse’s most famous passages must not be missed here: “And here are the advantages I anticipate from such a machine: liberation from the arbitrary paralyzing tempered system; the possibility of obtaining any number of cycles or, if still desired, subdivisions of the octave, and consequently the formation of any desired scale; unsuspected range in low and high registers; new harmonic splendors obtainable from the use of subharmonic combinations now impossible; the possibility of obtaining any differential of timbre, of sound-combinations, and new dynamics far beyond the present human-powered orchestra; a sense of sound projection in space by the emission of sound in any part or in many parts of the hall as may be required by the score; cross rhythms unrelated to each other, treated simultaneously, or to use the old word, 'contrapuntally', since the machine would be able to beat any number of desired notes, any subdivision of them, omission or fraction of them – all these in a given unit of measure of time which is humanly impossible to attain." Edgard Varèse, in: Paul Griffiths, *Modern Music: A Concise History from Debussy to Boulez,* London & New York, Thames and Hudson, 1986, 111. [↑](#footnote-ref-27)
28. Chou Wen-chung, op. cit, 163. [↑](#footnote-ref-28)