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Leif Segerstam and His Path to Aleatory Music

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Abstract. The article examines the genesis of the technique of free pulsation — an individual version of the aleatory technique developed in the music of Finnish composer Leif Segerstam. Its formation went underway from the middle of the 1960s to the middle of the 1970s. During the course of this period, Segerstam carried out a number of artistic projects, of which the following are examined in this article: a number of works carrying the composer's inscription "organic musical kaleidoscope"; the piano composition *Seven Questions to Infinity*; the Fifth, Sixth and Seventh String Quartets. An analysis of the compositional techniques and means utilized in each case made it possible to come to the conclusion that Segerstam's motion towards an original version of the aleatory technique was connected with a consistent restriction of the improvisational element, its subjugation to the will of the composer. While the organic musical kaleidoscope in its specific features correlated with free collective improvisation, the *Seven Questions* corresponded with an individual manner of improvisation based on instructions compiled by the composer. Such a solution has also been applied in the middle section of the Seventh String Quartet, but in this case, it was carried out within the context of an instrumental ensemble. Finally, in the outer sections of this String Quartet, improvisation became a means of organization of aleatory texture and built into the space modelled by the composer. Although the phenomena of improvisation and the aleatory technique are related to each other, they pertain to different traditions: improvisation stems from a centuries-old practice of performance, while the aleatory technique is a part of the art of composition. Leif Segerstam, who in his compositional works from the late 1960s to the middle of the 1970s varied his attitude towards improvisation, not only progressed along the path of formulating his own technique, but also genuinely formed himself as a composer, overcoming his past of a performer and conductor.

Keywords: Leif Segerstam, technique of free pulsation, aleatory technique, improvisation, organic musical kaleidoscope, *Seven Questions to Infinity*, Seventh String Quartet

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Лейф Сегерстам и его путь к алеаторике

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Аннотация. В статье рассматривается генезис техники свободной пульсации — индивидуальной версии алеаторики, сложившейся в творчестве современного финского композитора Лейфа Сегерстама. Её становление осуществлялось с середины 1960-х до середины 1970-х годов. На протяжении этого периода Сегерстам реализовал ряд творческих проектов, из которых в статье рассмотрены: опыт, имеющий авторское обозначение «органичный музыкальный калейдоскоп»; фортепианная пьеса «Семь вопросов к бесконечности»; Пятый, Шестой и Седьмой квартеты. Анализ композиционных приёмов и средств, использованных в каждом случае, позволил сделать заключение о том, что движение к собственной версии алеаторики у Сегерстама было связано с последовательным ограничением импровизационного начала, его подчинением композиторской воле. Если органичный музыкальный калейдоскоп по своей специфике соотносился со свободной коллективной импровизацией, то «Семь вопросов» — с индивидуальной импровизацией, опирающейся на составленную композитором инструкцию. Подобное решение было использовано и в средней части Седьмого квартета, но осуществлялось в рамках ансамбля. Наконец, в крайних частях этого квартета импровизация стала средством организации алеаторной фактуры и встроилась в моделируемое композитором пространство. Хотя явления импровизации и алеаторики родственны, они принадлежат разным традициям: за импровизацией стоит вековая практика исполнительства, алеаторика же является частью искусства композиции. Лейф Сегерстам, меняя в своих творческих опытах конца 1960-х — середины 1970-х отношение к импровизации, не только двигался к формулированию собственной техники, но и по-настоящему рождался как композитор, преодолевая своё исполнительское и дирижёрское прошлое.

Ключевые слова: Лейф Сегерстам, техника свободной пульсации, алеаторика, импровизация, органичный музыкальный калейдоскоп, «Семь вопросов к бесконечности», Седьмой квартет

Introduction

Leif Selim Segerstam (1944–2024) was a Finnish composer who has left behind a legacy that does not cease to astound us

by its immense proportions. He has written over 700 compositions in all the classical academic genres,¹ and such a great number of works is not characteristic for composers in the present day.² The factor that determined

¹ This includes the composer's concertos, string quartets, and chamber-vocal works, but a substantial portion of his oeuvres is comprised by his 371 symphonies.

² At the same time, it must not be forgotten that Segerstam was one of the most significant contemporary conductors and virtually up to the last years of his life had a rather strenuous schedule of performances and tours. During the time of his career, he performed as a chief conductor and a guest conductor virtually with all the major symphony and opera orchestras of Europe and America, and had an extensive repertoire. In this context, the scale of the musical legacy of Segerstam the composer is realized to an even fuller extent.

Segerstam's most intense artistic productivity was the technique of free pulsation developed by him, which was conducive for a quick arrangement of his musical conceptions. It possessed an aleatory nature and received its finalized form of expression by the middle of the 1990s.

At the present time, the composer's technique at its mature stage with various degrees of details has been elaborated on both by Finnish (Mikko Heiniö, [1] Kimmo Korhonen [2]) and by Russian (Irina Koposova [3]) musicologists. Among its special features indicated in the works of these scholars, mention has been made of the directedness towards the spontaneity of expression, the closeness of the process of performance to a stream of consciousness, the orientation on a large orchestral ensemble, the development of a special system of coordination of performers, making it possible to perform without a conductor, and the sonoric-aleatory quality of the texture. However, the issue of the genesis of free pulsation has never been covered in musicological literature up to the present day. This article is devoted especially to it.

Segerstam's Improvisational Endeavors: The Organic Musical Kaleidoscope and the *Seven Questions to Infinity*

As the first composition in which the ideas of free pulsation came to be known, researchers have indicated the Fifth String Quartet, which was completed in the summer of 1970. [2, p. 152] The String Quartet pertains to a stage of Segerstam's life during which a sharp decline of his compositional activities could be observed: having begun to bring his compositions out to the judgment of his audiences as far back as the 1960s, by the end of that decade, the Finnish musician almost came to a pause in his composing. According to the list of his works, the crisis lasted from 1968 to 1972, — during these years, only six works were written, whereas throughout several years before that, around thirty had been created.³

The turn of the 1960s and the 1970s became in the life of the young musician a time of search for his own path. The years of study had remained behind him,⁴ at that time Segerstam developed his reputation as a conductor,⁵ and parallel to that he was

³ For comparison, by the moment of the final development of the principles of free pulsation, Segerstam underwent a reverse process — an upsurge of productivity: prior to 1997, he composed on average around 10 oeuvres each year, then there appeared a considerably larger number of them, moreover, in terms of the genre indications, the symphonies gained a significant lead.

⁴ In 1963, Segerstam graduated from the Sibelius Academy in Helsinki as a violinist and a conductor, then continued studying conducting at the Juilliard School, having received his Master's (1964) and Doctoral degrees (1965). More exact details of the first twenty years of the composer's biography are presented in Minna Lindgren's monograph about Segerstam, [4] as well as Irina Koposova and Yulia Isaeva's joint article about him. [5]

⁵ Segerstam began his path as a conductor in 1965 with the Finnish Radio Symphony Orchestra. From that time, he frequently changed his place of work (having held the post of the second conductor of the Finnish and the Royal Swedish Operas, and directed the Orchestra of the Deutsche Oper Berlin), until in the Fall of 1975 he received his first significant job offer abroad — to direct the Vienna Radio Symphony Orchestra, having remained the chief conductor of which for the next seven years.

formulating not only his personal principles, but also the means that made it possible to manifest them. The results of this process found their reflection in the artistic endeavors of that time: the attempts to apply free collective improvisation (the summer of 1966) in the piano composition *Seven Questions to Infinity* (1970) and the Fifth, Sixth and Seventh String Quartets (1970–1975). All of these works expressed the motion of the composer's thought connected with the search of the artistic "self" and are capable of providing an impression of how the Finnish musician encountered the ideas of aleatory technique.

It is quite natural that Segerstam, who from the years of his youth defined himself first of all as a conductor,⁶ was aided in his discovery of original compositional conceptions by his work with the orchestra. Having begun to stand before the conductor's podium, he confronted with an important problem: the necessity of precise adherence to the musical score and the conductor's instructions deprived the orchestral musicians of any performance initiative. The desire to instigate them with the latter induced him to search for different variants of artistic ideas capable of fulfilling this task. Having acquired a fair share of experience in improvising, the musician decided to implement improvisation into orchestral practice.

The urge towards this means of music-making was intrinsic for Segerstam, who possessed perfect pitch and played on various different instruments, and only increased through the years.

He had begun improvising as far back as during his childhood, in his family circle. It is also known that prior to his departure to study at the Juilliard School, Segerstam regularly played jazz in Helsinki. In the USA this predilection received a professional "faceting": Segerstam began his composition studies with Hall Overton, a musician who possessed a special standing on the New York jazz scene and implemented improvisation into the pedagogical process on a systematic level. On the basis of his students' memoirs, it may be concluded that in his teaching, Overton exerted attention not only to the classical repertoire, but also to arrangements of jazz compositions; he taught improvising solo and in ensembles, for which end he invited famous New York-based jazz performers, with whom he cooperated as a pianist.⁷ It is also significant that Overton was one of the pioneers of free jazz, since he was among those performers who, having gathered together in New York since 1957, were some of the first musicians in America to examine the possibilities of free music-making.⁸ While evaluating the recordings made during the

⁶ Segerstam first stood at the conductor's podium at the age of 12. At that time, he was playing in the Helsinki Youth Orchestra, the director of which, Tauno Hannikainen, having observed the adolescent's outstanding talents, began involving him in conducting in rehearsals. The concert debut of Segerstam the conductor took place at the age of 13, when he directed the performance of Beethoven's *Egmont*. In 1960, during a tour of the Helsinki City Orchestra across Central Europe, the 16-year-old Segerstam became the assistant conductor to Hannikainen already in an ensemble of adults.

⁷ For more information about this, see: Reilly J. Hall Overton — Ashes to Ashes. *Sequenza 21*, 2006. URL: <https://sequenza21.com/2006/07/hall-overton-ashes-to-ashes.html> (accessed: 25.10.2025).

⁸ Besides Overton, these meetings featured the participation of composers Earle Brown, John Cage, and Edgard Varèse, saxophonists Teo Macero and John LaPorta, double-bassist Charles Mingus and other musicians. [6, pp. 76–77]

course of these meetings, Roman Stolyar accentuates his attention on the peculiarities that would become the distinctive feature not only of free jazz improvisation, but also of Segerstam's future compositional technique. These include the rejection of regular meter, "complete spontaneity in the entrances of the instruments," "the tendency of an equitable dialogue between the soloists," and "the emotional vigor with which the musicians play." [6, p. 77]

It must not be forgotten that prior to the beginning of his studies with Overton, Segerstam did not engage in composition on a systematic level.⁹ And, although he never spoke about this, from all appearances, his communication with the American musician exerted a substantial impact on him, helped him believe in the potential of improvisational utterance and gave way to the first experiment that generated in his musical activities the aspiration towards an individual version of the aleatory technique.

This resultant experiment became the so-called organic musical kaleidoscope¹⁰ (orgaaninen musiikkikaleidoskooppi), which in its essence was a collective orchestral improvisation. The summer school Orivesi¹¹ was picked as the venue for its realization, and Segerstam taught his classes there, after

having returned to Finland from the USA. In the summer of 1966, he offered to conduct a four-day seminar for instrumental musicians, which would provide them with skills of free playing without any notated music. The orchestral musicians first practiced by carrying out peculiar types of exercises: they "created musical landscapes, reacting to various sound signals, for example, the strike of a gong." [4, s. 149] It was supposed that after a number of such classes, all those present would learn to make their decisions during the process of collective improvisation and would be able to create musical compositions developing according to the principle of a combined sonic flow.

Segerstam's seminar was preceded by preparation. He "developed a table of musical parameters that were able to combine together freely" and then "tested his conception with the aid of a piano and two tape recorders." [Ibid.] Leif recorded his improvisation on a tape, then superimposed new layers of improvisation on it, consistently fixating the result (Photo 1). Carrying out the indicated operations numerous times, he attempted to understand how to protect a musical composition based on the musician's random choice from transforming itself into chaos. His conclusion was simple: it was necessary to orientate oneself on one's

⁹ In Finland Segerstam took private lessons for a certain period of time with Joonas Kokkonen, one of the leading Finnish composers of the 1960s.

¹⁰ In translation from the Finnish, "orgaaninen" may mean "organic," either in the sense of "natural," or in the sense of "biogenic." Considering the composer's intentions, in the case of his endeavor, the first meaning is more applicable, as it presumes the trait connected with the very essence of the phenomenon and the natural attributes stemming from it.

¹¹ The school was organized from 1952 at the Orivesi College and was named after the well-known Finnish choirmaster Heikki Klemetti. It included performance studies in a youth orchestra, vocal and choral conducting classes. The school had greatly contributed to the development of musical education in Finland (for more detail about this, see: [7]). At the time of his youth, Segerstam participated in this school numerous times, and during the years 1965–1967 assumed the artistic directory of it.

own ear and inner sense of form.¹² Although for most of the musicians with whom he worked this proved to be insufficient: they did not possess the performing experience comparable to Segerstam's and could not master the skills of collected improvisation in such a short period of time. This failure to achieve success in this endeavor compelled the young composer to continue his quests.



Photo 1. Leif Segerstam Researches the Possibilities of the Organic Kaleidoscope¹³

Segerstam included into his subsequent improvisational project — the piano piece *Seven Questions to Infinity* — several elements that made it possible to regulate the spontaneous process and, as a consequence, reined in free improvisation. Not only did he limit to an extreme measure the ensemble of performers and provide the piece with a poetic title, helping concretize the content in broad outline, but, most importantly, he fixated the elements of this composition in his created score-guide (Example No. 1). The latter is set forth on one page and contains a table surrounded by verbal commentaries. Elements of the score convey the information about the parts of the left hand (the table) and right hands (the text).

The part of the left hand is more stable and is based on a succession of seven nonrecurring intervals taken from the pitch of middle C. Its structure is as follows: major third — major second — augmented fourth — a perfect fourth — a minor second — a minor third — a perfect unison.¹⁴ It becomes obvious that the organization of this succession of intervals contains certain elements of symmetry, while

¹² As Minna Lindgren writes, the young composer also studied works pertaining to philosophy, mathematics, and sociology wherein he was searching for elucidation for the compositional techniques generated by him. [4] He found as kindred to him the conception of logical atomism brought in by British mathematician and philosopher Bertrand Russell. Russell was convinced that language was capable of reflecting reality in a precise manner, on the condition that its logical structure is compatible with the structure of the world. This may be achieved with the aim of atomic propositions that describe individual things, their features or relations. Building on this idea, Segerstam would carry out in his musical compositions from the 1960s and 1970s the experiment in the “atomization” of his own musical language and the search for that minimal amount of units the combination of which would allow him to construct an artistic utterance. The composer also mentioned his interest in the works of American anthropologist and playwright Robert Ardrey, especially the concept of the “territorial imperative” developed by him, which, according to Ardrey's thought, is characteristic for animals and human beings and is connected with the aspiration to marking off one's territory. Introducing into musical compositions a certain “line of support” which enables with various means to organize the musical texture and highlight in it the strata possessing their own ranges and functions and at the same time dependent on each other would become the distinctive feature of all the compositions of Segerstam's early period, and later would spell out the characteristic feature of the textural organization of Segerstam's music.

¹³ The photo is taken from Minna Lindgren's monograph. [4]

¹⁴ Within the lines of the table, they are shown by means of customary and letter-syllabic notation, which discloses the opportunity for a musician with an insufficient level of academic preparation to perform the work.

Example No. 1

Leif Segerstam. *Seven Questions to Infinity*.
Manuscript score

the level of tension here gradually increases at first, and then subsides. At the discretion of the performer, each interval is repeated within a certain period of time, which results in the framework of seven sections of the form.

The part of the right hand freely improvises against this background, with the consideration of several rules at once: it is not constrained in terms of register and spans the entire range of the piano (with the exception of the first octave, taken up by the left hand). The part of the right hand is built out of tremolo fifths that within the range of one register glide

up and down in tones or semitones, while between the registers they transfer in perfect fifths built out of one of the pitches of the source interval.¹⁵ As a result, the pitch-wise and textural image of the work turns out to be correlated with the means of its reflection in the score: by analogy with the way the text freely encircles the table, the collection of perfect fifths entwines the set of intervals, presenting something in the vein of a *cantus firmus* for this composition.

The process of coordinating the two layers of texture between each other is enabled by

¹⁵ Moreover, the musical score contains an indication that the motion in fifths should be accompanied by various combinations of acceleration/crescendo and deceleration/diminuendo.

instructions tracing the characteristic features of each section (Table 1). They comprise a peculiar breviary of the composition's figurative plan. While determining its respective stages, the composer stemmed from the phonism of the intervals of the *cantus firmus* and the associations fixated behind them in artistic practice.

Segerstam's interpretation of the soundings of the major and minor thirds (positivity and gentleness), the major and minor seconds (energy and the feeling of pain), and the tritone (the confrontation between life and death) are quite predictable. At a major third from the pitch C he expectedly hears Bach's pulsation, most likely, stemming from the Prelude opening up Volume I of the *Well-Tempered Clavier*. Only in regard to the minor third and the unison do his images become more individualized (the mystical element and the moment of "here and now").

Overall, the particular features of the textural and phonic development in Segerstam's composition provide the hint that the answer to all the "questions to infinity" for the composer is to live "now," dissolving oneself

in the present moment. This is hardly by chance. As Minna Lindgren writes, at the turn of the 1960s and 1970s, Segerstam separated chronological and psychological time for himself [4, s. 135] and, judging by the titles of the compositions of those years, at that time he confirmed his belief that he wished to "fixate" the present moment by means of his music.¹⁶ For the composer, the *Seven Questions* became an example of a work capable of adapting itself flexibly to the uniqueness of each moment. The piece became his favorite composition, which he performed on occasions. At the time, the different interpretations of the *Seven Questions* rendered by other performers caused the composer to convince himself of the non-universality of the method of fixating the artistic concept applied in this work (for more detail on this, see: [4, s. 193]). Despite the presence of the musical score and other means of control of spontaneous utterance, the *Seven Questions* continued to pertain to the sphere of improvisation and strongly depended on the performer's ability to develop in an independent manner the ideas concisely noted in the score-guide.

Table 1. Leif Segerstam. *Seven Questions to Infinity*.
Figurative Characterizations of the Intervals of the Part of the Left Hand

| Major third | Major second | Augmented fourth | Perfect fourth | Minor second | Minor third | Perfect unison |
|---|--|---|---|--|---|--|
| positive, harmonious, happy, quasi "BACH" pulsations | add energy, steering conviction into your playing | aggressive challenging indignation & right almost for death and life! | CALM! Stoic acceptance of life destiny open display of your true self | hysteric weepily of the humiliation and hurt feelings sorrow! Loss of love | mystic nature forte soft wisdom, acceptance of reality and surreality | stopping to vibrate just pointing or the Now |

¹⁶ We can make assumptions about this from the lexis of the titles, in which the words "now," "instant", or "moment" began being used systematically: *Three +/or Four NOW* (1972), *Now* (1973), *Seven Red Moments* (1968), *Preserved Instances* (1973), *Moments Kept Remaining* (1975), *Another of many nnnoooooowwws* (1975). This peculiarity present in the titles of the works would be maintained in the future.

Segerstam's Seventh String Quartet: Improvisation vs. Aleatory Technique

Segerstam continued to search for means of reconciliation the desire of fixating through sounds the unique image of the present moment and the performer's ability of presenting himself as a copartner of this process — in his string quartets of the early 1970s: the Fifth (1970), Sixth (1974) and Seventh (1975). These compositions became an important step on the path of forming the master's individual compositional technique. Within their space, it began to acquire more apparent shape, the outer manifestation of which was the systematic indication of a free pulsation

in the performance instructions of the respective movements.¹⁷

It was quite natural that the genre of the string quartet became a creative laboratory for Segerstam. The composer had a fair share of experience of music-making in such an ensemble,¹⁸ and by the 1970s he assembled his own ensemble consisting of like-minded people (Photo 2), with whom it became quite easy to test out various ideas.¹⁹ Moreover, the string quartet, as the basis of the string section of the orchestra, provided the opportunity of thinking "with room to grow," with a future hindsight at the orchestra and the genre of the symphony, which was especially important for the further development of the Finnish composer's creative ideas.



Photo 2. Leif Segerstam and His String Quartet. The Early 1970s²⁰

¹⁷ The word "freepulsatively" appears already in the *Seven Questions* as an indication of the character of rubato when performing the part of the left hand (see the third line in the table in Example No. 1). In the string quartets, it begins to be applied in another function, not as a performance instruction, but as a variant of the tempo indication. At the same time, the composer tried out various means of its spelling: by means of a hyphen, separately (in the string quartets), and together (in the *Seven Questions*).

¹⁸ Segerstam received his first experience of playing in a string quartet as far back as during the time of his youth: Tauno Hannikainen assembled a string quartet ensemble from the ablest participants of the Youth Orchestra; in it Leif played the viola, Olvi Palli and Lajos Garam played the violins, while Helja Parviainen played the cello. Hannikainen held the rehearsals on Saturdays at his house and organized performances, of which the young musicians particularly remembered one concert at Ainola, the home of Sibelius. [4, s. 50]

¹⁹ The ensemble of the quartet included: Leif and Hannele Segerstam (first and second violins), Mauri Pietikäinen (viola), Veikko Höylä (cello).

²⁰ The photo is taken from Lynn René Bayley's article. See: Bayley L. Remembering Leif Segerstam in the 1970s. *The Art Music Lounge*. July 8, 2016. URL: <https://artmusiclounge.wordpress.com/2016/07/08/remembering-leif-segerstam-in-the-1970s> (accessed: 25.10.2025).

Each of the three indicated string quartets possessed its own characteristic features. The Fifth String Quartet reflected the composer's search for a new type of musical notation that could provide for "the flexibility of music at the present moment" [4, s. 170] and for that reason was composed for a longer period of time than the others — for almost two years. In comparison with the notation of the previous string quartets, in the Fifth, Segerstam discarded metric organization and included aleatory fragments into the traditional musical notation — all of these features became markers of free pulsation. The first experiment turned out to be imperfect. The composer acknowledged that the "aspiration of liberating the imagination" led to a "mass hysteria" of sounds. After comparing the resultant notation with a chaotically organized motion of a population of lemmings during their mass migration, Segerstam compared the uncontrolled sound current with a "lemming-type procession of sounds." [Ibid., s. 171] This determined the subtitle of *Lemming-Quartet* (Sopulikvartetto) attached to this composition.

The Sixth String Quartet is noteworthy for its written indication "In the Spirit of Gustav Mahler" provided at the beginning of the composition's finale, which corresponded with the expressive character of the music, but also alluded to the incorporation of elements of theatrical performance into the work. Music critic Lynn René Bayley,²¹ who was present at the premiere, recalled: "performances of this work <...> always featured a ghostly figure made of chicken wire and papier-maché who sat at a piano, silently, until near the end of

the last movement when the first violinist is requested to back up on the stage and 'help' the ghost of Mahler play the *A* sub-contra octave on the piano."²² The construction made of papier-maché played another role: it pressed the right pedal of the piano, which created, by means of the open lid of the piano, a resonance to the sound of the string quartet (Photo 3).

The Seventh String Quartet continued in its own way the emergent idea of the dialogue with the music of the past: its middle movement featured quotations of the Adagio from Johann Sebastian Bach's *First Violin Sonata*, and its outer sections used forms stemming to the Baroque period, — the chorale arrangement and the fugue. At the same time, in light of the issue of correlation between the aleatory technique and improvisation existent in the article,

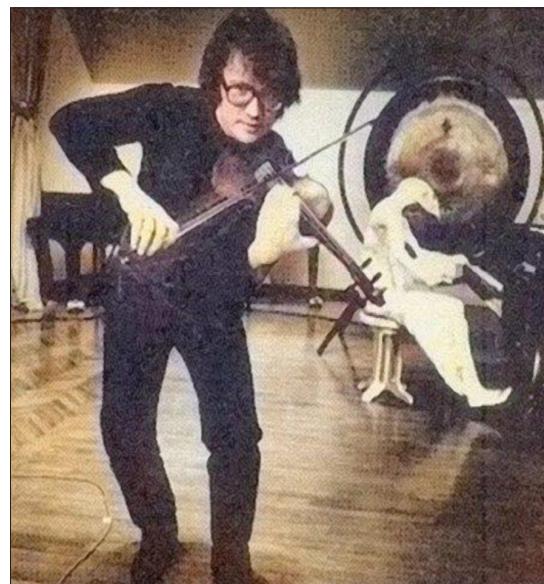


Photo 3. Leif Segerstam after the Premiere of the Sixth String Quartet²³

²¹ Lynn René Bayley is an American music critic, observer, journalist and researcher. She worked in the journals *Opera News*, specializing in the opera repertoire, and *Fanfare*, which covers the events of classical music and jazz; she is the editor-in-chief of the independent internet-edition devoted to jazz and classical music *The Art Music Lounge*.

²² Bayley L. Remembering Leif Segerstam in the 1970s. *The Art Music Lounge*. July 8, 2016. URL: <https://artmusiclounge.wordpress.com/2016/07/08/remembering-leif-segerstam-in-the-1970s/> (accessed: 25.10.2025).

²³ The photo is taken from Bayley's article. See: Bayley L. Op. cit.

the comparison of the particular features of the composition's middle and the outer movements with each other appears as illustrative. Before turning to it, we shall present a concise description of the entire string quartet.

The first movement, which is the most massive in the cycle, is perceived as an indivisible and very expressive flow of sound, one that is facilitated by the specificity of the material. In it the composer continued his experiment with "atomizing" the musical language, which he began as far back as in the *Seven Questions*. Now the role of the elements out of which the texture is created is played not only by the limited circle of intervals, but the various figures from which the respective instrumental parts are assembled: repetitions, different types of glissandos, arpeggios and tremolos.

The musical score resembles a standard one outwardly: it features specific arrangements of rhythm and pitch and is equipped with detailed nuancing (the dynamics, character, and agogics are written out in detail). But, at the same time, metric organization is absent, as the result

of which the instrumental parts coordinate with each other freely. This trait redoubles due to the systematic use of aleatory squares. At the same time, the texture preserves its reliance on functions traditional for the homophonic texture (the melody, bass, and harmonic figuration), which enhances the division of the musical presentation into the relief and the background. It appears most vividly at the beginning of the movement and in the running of the overall culmination, where in the first section a rather structured theme is expounded, in its character, close to the Lutheran chorale, *Aus tiefer Noht schrei ich zu Dir*, possessing a melodic carcass comparable to it: an initial harmonic progression of I–V–VI–V, followed by a descent at an interval of a tonic perfect fifth.

The manifestation of the theme is illustrative: in both cases, it is presented with a repetition, similar to the *Stollen* of the Lutheran chorale, and its expressed with lengthy note values: at the beginning, in the key of *A minor* (Example No. 2a), while upon repetition, it shifts to *B-flat minor* (Example No. 2b).

Example No. 2

a) the beginning of the string quartet

The musical score consists of four staves, each representing a different instrument of the string quartet. The instruments are likely the violin, viola, cello, and double bass. The score is in 4/4 time. The first staff (top) starts with a dynamic of *pp cresc.* (pianissimo crescendo). The second staff (Bassoon) starts with *espr. & poco rubato con emozione* (expressive and slightly rubato with emotion). The third staff (Cello) starts with *mf* (mezzo-forte) and *rit.* (ritardando). The fourth staff (Double Bass) starts with *(mf) cresc.* (mezzo-forte crescendo) and *sfz* (soft dynamic with a sharp accent). The score includes various dynamics such as *pp*, *mf*, *sfz*, *p*, *f*, *pp cresc.*, *mf cresc.*, *sf cresc.*, *rit.*, *molto*, *accel.*, *trem.*, *rall.*, and *tempo*. Articulations include *pizz. arco* (pizzicato with bow) and *smorz.* (smorzando). The score also features aleatory squares and specific performance instructions like *espr. con gravita* (expressive with gravity) and *tempo espr. molto* (tempo expressive, very much).

Leif Segerstam. Seventh String Quartet.
First Movement. Allusion to the Chorale

b) culmination of the First movement



The genre nature of the theme and the means of its statement make it possible to observe the chorale arrangement as the compositional model of the first movement. The commenting principle that is stated here is placed at the foundation of the textural organization in the second movement, as well.

As has been mentioned before, it includes a quotation of the first movement of Bach's Sonata in *G minor*, played by the first violin

against the background of the accompaniment sounded out by the other members of the string quartet. The musical text of Bach's Sonata is replicated here in full and very precisely. In its notation, the treble clef offers a surprise: it is depicted in an inverted manner and presented in quotation marks, which signalizes of an unusual layout of Bach's music (Example No. 3). The matter is that the composer applied the technique of *scordatura* to the first violin,

Example No. 3

Leif Segerstam. Seventh String Quartet.
Second movement. Quotation of J.S. Bach's Sonata

notation of left hand

and whatnot is the tools of an interpreter to make a musicmoment or movements in sound LIVE ... PLEASE NOW accept to take the responsibility of figuring out how your present state of temperament could, if you chose masterly of your interpretative richnesses, motivate the movements of your left hand on this fingerboard differently tuned ... if it makes sense to yourself, that is, if you carry on a "stored" motivation, a subjectively felt one, of how you now "speak" on your instrument then it will carry on to the listener too... What is actually "music" - (?), if you make out "music" of this, well, then you might know some secrets of how to make "Music" out of "any sound" ... Don't play this if you are not convinced that you will succeed ... Go ahead, be intensive, have fantasy, greetings, L. S. 11. 12. 34 Tapiola.

occasionally also play pizz. *(on glass, smile with glass. vibrato any step on the "g" string like Indian music)*

just as to the other instruments, as well, which presented a sort of filter to the familiar music, having altered the customary sound (Example No. 4). While realizing the notation of the sound of the sonata in the version suggested by Segerstam, it is easy to see that from the primary musical source the rhythm, agogics and overall contour of motion are preserved, but the melodic line itself is considerably altered by means of additional chromatic notes (Example No. 5). Together with the accompaniment, the chief unit of which turns out to be the cluster, spanning almost an entire chromatic scale, this creates a sound similar to sonoristic type.

The finale of the string quartet is written in the form of a fugue conceived in the manner of the orchestral fugues of the Classicist composers, wherein the baroque structure acquires new features due to the impact of principles of the

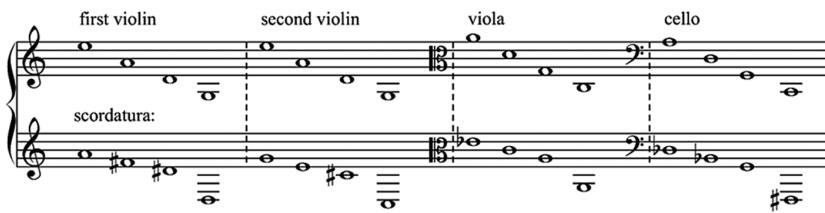
sonata form. By analogy to the latter, only the exposition section is structured the most strictly, while beyond its boundaries, the intelligible basis of the form is gradually “dissolved,” the fugue statements are truncated, making way to broad episodes saturated with thematic intonations. The episodes in Segerstam’s fugue, as the result of the development contained in them, create a wavelike relief of structure. The culminating points of the wavelike form are marked by important dramaturgical events: the reminiscence of the chorale theme from the first movement (p. 11), a counterpoint of the themes of the outer movements (p. 13) and the appearance of a variant of the melodic line in which the characteristic intonations of the two themes are united together, summing up the present work.

Thereby, although upon first encounter with it, the Seventh String Quartet creates the impression of a rather spontaneous composition, which is affected by free metric organization, a regular inclusion of aleatory sections into the development, a high level of expression and a sound resembling the sonorous type, careful analysis of this work discloses distinct logical regularities intrinsic to the structure of this work.

What does a comparison of the movements of the string quartet tell us about Segerstam’s mastery of the possibilities of the aleatory technique? When answering this question, we must turn our attention to the fact that the indication of the free pulsation was provided by the composer only in the outer movements,²⁴

Example No. 4

Leif Segerstam. Seventh String Quartet.
Second Movement. Scordatura



Example No. 5

Leif Segerstam. Seventh String Quartet.
Second Movement. The Real Sound of the Quotation from Bach



²⁴ The movements of the string quartet have the following indications: I. Free-but-secure-pulsatively; II. Adagissimo; III. Free-and-secure-pulsatively.

in which the means of organization of the form and texture are different from those in the middle movement of the composition.

The texture of the Adagissimo is evidently divided into a solo instrumental part (the first part, in which the transformed quotation is heard) and the accompaniment (comprised of the other instrumental parts; see Example No. 3). In comparison with the soloist's part, the musical text of the accompanying stratum is strikingly scanty. The composer merely sets the patterns of the introductory section against the background of which an altered sound of the first movement of Bach's Sonata is brought in, and then upon the notation of the parts of the accompanying instruments, is limited to a wavelike line, presuming a repetition of the patterns. But, as it follows from the extensive commentary written by the composer, also present in the music, after the appearance of the musical quotation, there is a transition presumed passing from a literal repetition towards improvisation. "Please don't hesitate to move your own way too," Segerstam calls upon the performers, "please improvise OTHER, OWN! <...> please don't hesitate to imitate one or two phrases of the Bach's music <...> if you make it cleverly it might be interesting and worthwhile!"²⁵ In the final section of the form, appearing from the moment of the cessation of Bach's music, the composer goes as far as to incite the players to switch from improvisation along the set model (the role of which is set by the quotation) to free music-making: "Do still play something relaxing in functions of your used patterns, no more 'Bach' though."²⁶ Here also a set of

figures appropriate in this section is provided: "Arco legato, tremolo, pizzicato or flageolet pizzics of the open strings natural harmonics..."²⁷

While the setting on improvisation in the accompaniment parts is clear (in the quotations cited above, we find direct indications of this, as well as a declaration of the randomness of the performed material), in the first violin part, other problems are fixed. As has been marked out before, the application of the *scordatura* substantially distorts the image of Bach's Sonata. Its deconstruction here is carried out by Segerstam with a particular goal in mind — to cause us to contemplate on what means transform written-down music into live intonating. In his commentary he writes: "And what not is the tools of an interpreter to make a music movement or movements in sound LIVE."²⁸ It is obvious that the problems that appealed to the composer as far back as the late 1960s, remained relevant for him onwards. He continued to search for the means that would "awaken" the performer's initiative and came up with interesting solutions.

Having consciously distorted the music of the first movement of Bach's Sonata, Segerstam creates special conditions for the violinist: although the latter is playing a familiar musical text, applying the customary fingering, because of the chromatization of the resultant sound and its unusual impression it makes, during the process of playing, the expressive side of performance comes out to the forefront, creating that individual content the performer wishes to and is able to convey by means of sound. As Segerstam writes, "If you carry on a 'stored' motivation, a subjectively felt one,

²⁵ Segerstam L. String Quartet No. 7. Helsinki: Music Finland, 2013. P. 9.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

of how you now ‘speale’ on your instrument then it will carry on to the listener too!”²⁹ He is convinced that it is “possible to make ‘music’ out of only phrasing, bow pressure, tone-colors, varied vibrati, agogic finesse, interpretation tradition.”³⁰

At the same time, although there is no direct indication of improvisation in his words, its spirit is perceptible here, as well. The composer concludes his extensive commentary addressed to the first violin with the call: “Go ahead, be intensive, have fantasy, greetings.”³¹ On the basis of what is stated above, the conclusion suggests itself that the slow movement of the string quartet still remains in the grip of improvisational culture and those traditions that the composer had adhered to in his earlier works. The quartet’s slow movement is even perceived as a direct continuation of the *Seven Questions*, since it is constructed on similar principles: at the foundation of both compositions lies the counterpoint of two layers — a stable one, which is fixated in the music by means of notes, and a mobile one

that is freely improvised against the background of the former.

In the outer movements of the string quartet, the principle is different. The first movement and the finale possess poly-melodic textures constructed of rather equitable lines formed of the instrumental parts that are based entirely on notated music. Within the space of two movements, this rule is infringed upon only once — at the most important point of the dramaturgical development of the entire composition, namely, the appearance of the chorale theme in the finale. It appears in the two violin parts as a canon sounding against the background of freely improvised accompaniment; the latter helps emphasize the contrasting quality of this fragment to the preceding section of the form (Example No. 6).

At the same time, the freedom, undoubtedly, permeates into the textural organization of the outer movements. The absence of any single meter and the regular introduction into the musical development of aleatory square units allow for the implementation

Example No. 6

Leif Segerstam. Seventh String Quartet.
Finale. Reminiscence of the Theme of the First Movement

²⁹ Ibid.

³⁰ Ibid. P. 8.

³¹ Ibid. P. 9.

of improvisational element into the coordination of the parts of the ensemble. But what is especially important is that the composer finds diverse means of control over this process: he brings in systematically instances of full or partial synchronization of the instrumental parts, making use of their simultaneous entrances or withdrawals, while during the moments of lengthy combined playing, highlights in the texture the instrumental part that would present the guide for the participants of the ensemble and would help with the overall coordination. In the first movement, this role is taken by the expositions of the chorale theme, and then the subsequent melodic lines resembling it based on scalar chromatic motion; in the finale, they are the statements of the fugue subject, transferred from one instrument to the next.³² All the aforementioned makes it possible to consider the Seventh String Quartet a truly landmark point in the process of formation of Segerstam's distinctive compositional technique, in which he began to separate for himself improvisation and aleatory writing, which is testified in an indirect way by the performance instructions provided by the composer to the respective movements of this work.

Conclusion

Thus, as expected, Segerstam's compositions pertaining to the period of his crisis and the first years that marked his recovery from it confer in no small way the particularities of the formation of the Finnish composer's individual style. Spanning with a single glance all the projects elaborated on in this article — from the organic kaleidoscope to the Seventh String Quartet — we may boldly assert that Segerstam's path

towards implementation of the aleatory technique in his works lay through improvisation, through a gradual subjugation of its possibilities to the composer's will.

A desire for spontaneous utterance attracted the Finnish composer in a natural way: improvisation helped establish in the music the singularity of each instance, which is what Segerstam wanted, and also returned the element of initiative to the performers during the process of spontaneous creation of sound form, which is what Segerstam the conductor was concerned about. At first, he gave way to the improvisational element with all the ardor of youth — his first experiments were directed towards free collective improvisation, the most radical in its musical means. At the same time, the compositions following the organic musical kaleidoscope, gradually restricted the performers' arbitrariness. The *Seven Questions* may be interpreted as an individual improvisation, which was to a limited degree controlled with the aid of the instructions contained in the score-guide. The middle movement of the Seventh String Quartet was one of the composer's works that corresponded with the former piece, wherein similar conditions were expressed within the frameworks of an ensemble. However, the outer movements of the string quartet ceased to pertain to the sphere of improvisation; their exposition was subjugated to the composer's will, which allowed for the element of controlled aleatory technique as a means making it possible to achieve a particular artistic result.

Undoubtedly, there are many things in common between improvisation and the aleatory technique; they are united by their fixation on the spontaneity of utterance,

³² At the mature stage of his music, this type of principle would express itself in the appearance within the textures of the symphonies, performed without a conductor, of beacon-like guiding sounds, which carry out a similar function.

the accentuation of the inadvertency of the result. At the same time, these two phenomena speak on behalf of different traditions: behind improvisation stands the century-old practice of *performance*, whereas the aleatory technique is a component of *the art of composition*. Consequently, Leif

Segerstam, changing his attitude towards improvisation in his artistic endeavors from the late 1960s to the mid-1970s, not merely progressed along the path of forming of his own compositional technique, but also truly developed as a composer, overcoming his past of a conductor and a performer.

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