

# **New Components of the Author's Own Composition Technique in Symphony No. 3 for Orchestra in the Light of Selected Visual and Auditory Illusions**

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## **ABSTRACT**

Arkadiusz Kątny's Symphony No. 3 is a contemporary work for orchestra inspired by infinity in visual and auditory illusions. This dissertation presents the process of symphony creation. The composer explores the world of illusions and mechanism of their operation in order to create a new structure with illusive features and to incorporate it into orchestral music. Arkadiusz Kątny's *Effect of an Endless Grid* was created in 2019 and it is inspired by the *Shepard Tone*, also known as *the Shepard-Risset Glissando* and by the achievements of Diana Deutsch, Lionel and Roger Penrose and the art of Maurits Cornelis Escher. Arkadiusz Kątny's *Effect of an Endless Grid* provides numerous opportunities for creative work within the score. In Symphony No. 3 it is incorporated in numerous layers, in both micro and macro-form, and it becomes the *structure of time elongation*. The string instruments are divided into two main layers. These are called the *Grid* (the *glissando grid* subject to acceleration or retardation) and the *Flow* (flow – musical material notated with the use of gradient lines). Both layers combine into the *Plexus*, which follows the principle of tessellation, with one layer becoming the background for another. This musical *plexus* undergoes continuous metamorphoses. The notation is characterised by a great graphic variety aimed to differentiate the two layers. The Brass instruments perform subsequent harmonic structures following the principle of morphing and frequency filtering. The Percussion instruments group complements the lowest and the highest bands mainly with noise-like sounds. The score utilises the composer's own system of dots extending the notes' values. The structure of vertical lines has been introduced to show pulse and to enable the simplification of notation. In result, the composer creates and utilises numerous new graphic solutions. The orchestra seating is arranged in a specific order, in accordance with the frequencies generated by the instruments so as to create an illusion of the surround sound, moving inside the orchestra. This idea creates a new way of acousmatic experience in live orchestra music. The work was composed owing to

newly developed techniques. In the process of the work continuous coming into being the endlessness of some components does not exist as a phenomenon showing their infinity. The sound reality of the work seems to exist symmetrically and endlessly, both prior to the work's beginning and after its end. The work is thus intended to be part of *infinity*, just like a walk on Lionel Penrose's *Stairs*. It is the first attempt to touch upon the subject of *infinity and illusion* in Arkadiusz Kątny's music.

Słowa kluczowe / Keywords: auditory illusion, musical paradox, visual illusion, optical illusion, impossible figure, impossible object, tessellation, metamorphosis, infinity, endlessness, infinity in music, acousmatic sound, spatial sound, surround sound, symphony, symphonic music, orchestral music, immersive experience, immersive music, immersion, iluzja słuchowa, iluzja audialna, iluzja wizualna, iluzja optyczna, figura niemożliwa, obiekt niemożliwy, teselacja, metamorfoza, nieskończoność, bezkres, nieskończoność w muzyce, dźwięk akusmatyczny, dźwięk przestrzenny, symfonia, muzyka symfoniczna, muzyka orkiestrowa, doświadczenie immersyjne, muzyka immersyjna, immersja, Shepard Tone, Shepard-Risset glissando, Diana Deutsch, Roger Penrose, Lionel Penrose, Maurits Cornelis Escher, Oscar Reutersvärd, Arkadiusz Kątny, III Symfonia, Symphony No. 3, Efekt niekończącej się siatki, The Effect of an Endless Grid, The Endless Grid Effect, minimalism, minimalizm, esencjalizm, essentialism