

Eight nine-note rhythms with the same intervallic content

Tom Johnson 2017

Knock on Wood. Solution 571, 2017

TOM JOHNSON ILLUSTRATED MUSIC

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Horario
Martes a sábado y festivos: de 10:30 a 14:00 y de 16:30 a 21:00 h
Domingos: de 10:30 a 14:00 h
Lunes no festivos: cerrado

Del 26 de octubre de 2023 al 28 de enero de 2024

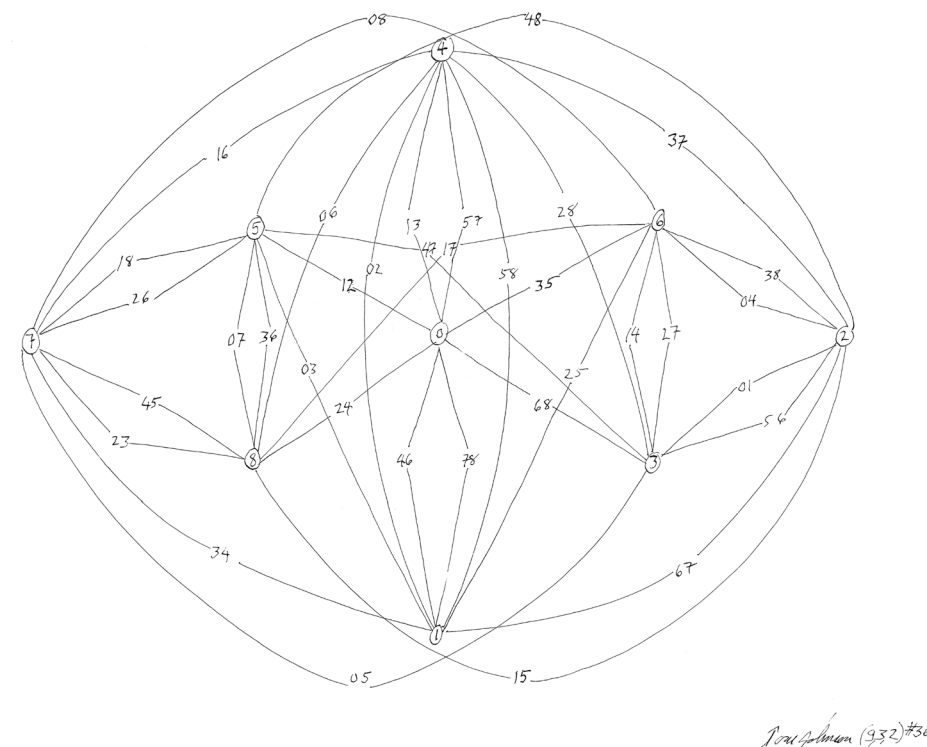
FOUR SERIES

In this section we present four series in a fragmented way. These are series produced in recent years and characterised by the use of block designs, basically made up of numbers and lines. They are the graphic representation of the different possibilities of the diverse formulations that define each of these series. Or in other words, the distinct solutions to the (mathematical) problems posed. Unlike *Imaginary Music*, in which the images precede the music, here it is mathematics and music that define the visual work, which can be interpreted either musically, as an intellectual artefact or as a simple diagram. The first, *Solutions (9, 3, 2)* (2021), is one of the most recent series, consisting of 36 block designs that took a block first defined by Elizabeth J. Morgan in 1977 as their starting point.

Intervals (2014), the only one presented in its entirety (9 drawings), focuses on the two possible tetrachords (a series of four notes separated by three intervals, traditionally of a perfect fourth or a frequency ratio of 4:3), which ascend to 48 with all their inversions and transpositions. These 48 distinct possibilities were generated by means of a computer programme and the piece was written for two monodic instruments, without indicating which ones.

In 1847, an English minister and mathematician named Thomas Pennington Kirkman posed the following problem: “Fifteen young ladies in a school walk out three abreast for seven days in succession: it is required to arrange them daily so that no two shall walk twice abreast.” Kirkman’s schoolgirls can be considered the beginning of the combinatorial designs in *Kirkman’s Ladies* (2005), which gradually became a serious subdivision of combinatorics. It takes 35 blocks to solve the problem: five blocks a day for a seven-day week. And that is what this piece, based on rational harmonies and written for three instruments, preferably flutes or harps, sets out to do.

In 1994, Tom Johnson produced a series devoted to Pascal’s triangle, a mathematical scheme used for expanding binomials, in which each number is the sum of those immediately above it. With its origin in *Music for 88, Pascal’s Triangle Modulo Seven* is one of those series in which, beyond composing it, Johnson finds the music. It is exactly what the title announces: Pascal’s triangle reduced to a seven-note scale.

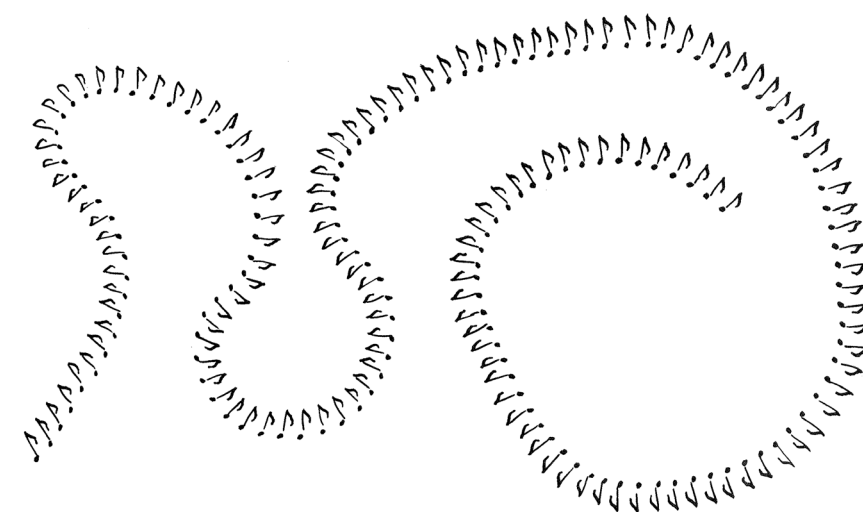


Tom Johnson (9,3,2) #36

Solutions (9, 3, 2)
Solutions (9, 3, 2), no. 36
2021

Imaginary Music
Winding Melody
1974

TOM JOHNSON ILLUSTRATED MUSIC

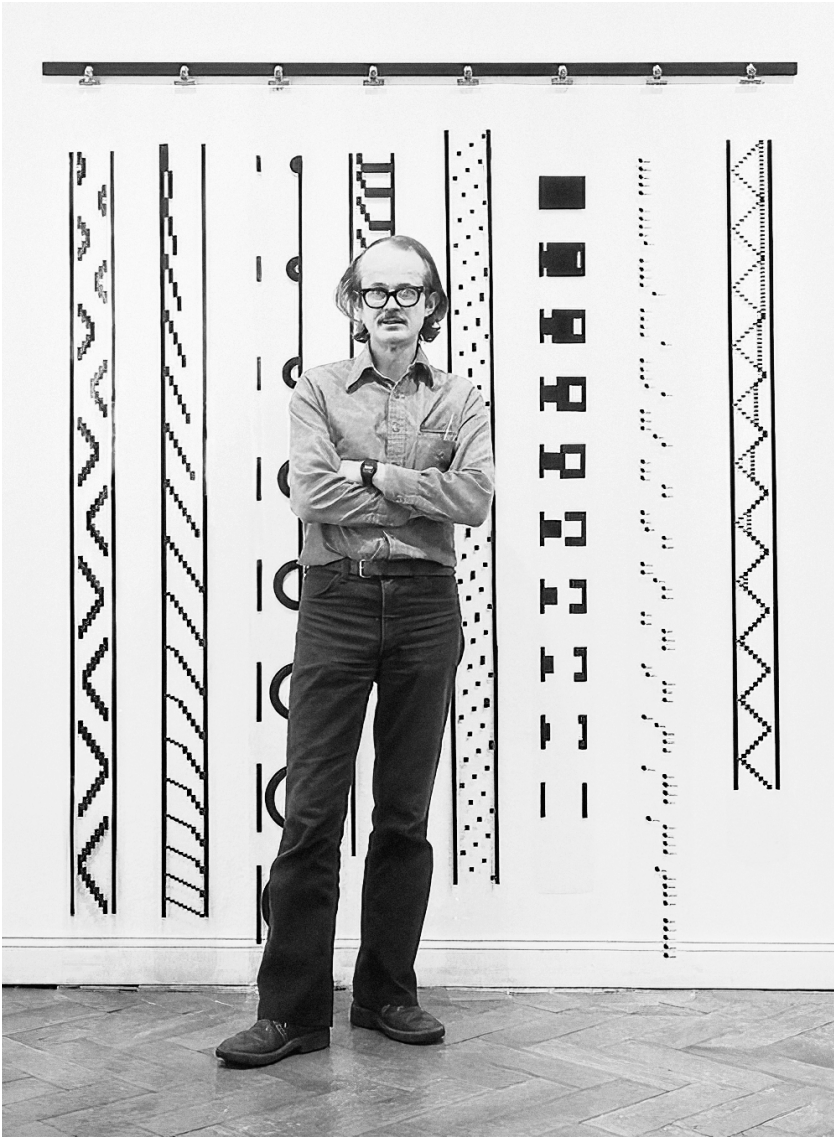


CENTRO JOSÉ GUERRERO
26/10/2023 – 28/01/2024

Illustrated Music explores the relationship between images and music in the work of Tom Johnson (Colorado, USA, 1939), a musician and composer who has carried out tireless exploration in order to push the boundaries of the arts and pave new paths. With a career spanning more than five decades, he is the creator of a musical oeuvre that goes beyond the limits of the strictly sonic to find its way into the territories of visual art, words and mathematics.

The exhibition is organised into three very distinct sections that attempt to describe and expand upon Johnson's broad universe. The first section focuses on *Imaginary Music* (1974) and *Symmetries* (1981), two series based on images and on the public's ability to imagine music. The second section presents *Knock on Wood*, an installation resulting from a long-term collaboration with musician and engineer Martin Riches (Isle of Wight, UK, 1942), in which mechanical instruments perform complex rhythms that would be difficult to play accurately by hand. The third section focuses on four of the many series he has produced during the past three decades, all of them closely related to mathematical problems and which, in this case, allow one to traverse the path from music and numbers to images. Finally, and as an appendix, a dialogue between José Guerrero's work and Tom Johnson's music is presented on the third floor.

In this exhibition we focus only on a small part of Johnson's vast oeuvre—the part most closely linked to the visual arts—but, among the different works and series, a timeline is drawn that spans almost his entire extensive career. Although he is more widely known as a composer, Tom Johnson is the creator of an exceptional body of visual work that runs parallel to his musical work or, to be more precise, forms an integral part of it. At a vertex where music, minimalism, mathematics, performance and visual arts converge, Tom Johnson has been constructing a world of his own based on very complex approaches that he employs with simplicity and serenity.



Tom Johnson. The rolls from *Reversibles*

LOOKING AT MUSIC: *IMAGINARY MUSIC* AND *SYMMETRIES*

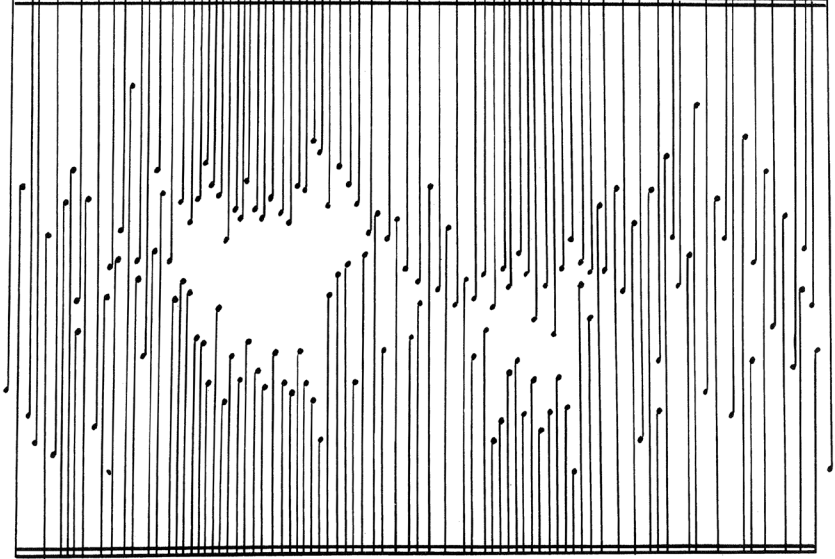
Imaginary Music, first published in 1974, is composed of a selection of 104 drawings that reinterpret the motifs of musical notation to create scores that can only be performed by one's own imagination. In all cases, the drawings are hand-drawn, with an air reminiscent of the world of comics and often with a playful tone. By means of a somewhat unusual exercise, Tom Johnson transforms himself into a visual artist in order to lose control over the final form of his music. Also presented here are some of the discarded works from the original edition, which had not been exhibited until now.

In 1981, Tom Johnson again tackled the visual aspect of a score in *Symmetries*, a set of more than 50 drawings made with elements from musical notation. In this case, they are not drawings made by hand, nor are they scores left entirely to the random interpretations of someone else's mind. On the one hand, the drawings were made with a music typewriter, which allowed him to repeat elements and ensure perfect symmetry and consistency throughout. On the other hand, Johnson proposes translations of these visual symmetries into scores that can be played by four hands. Then, from the blank page they were transferred onto the stave, although this process was carried out in later years.

KNOCK ON WOOD AND THE COLLABORATION WITH MARTIN RICHES

Knock on Wood employs mechanical wooden percussion instruments that automatically perform a series of complex rhythms that would be nearly impossible to play accurately by hand. Each group of instruments is made from a different type of wood, each with its own characteristic timbre, and plays its own melody, totally indifferent to what the other groups are playing, followed by a silence.

As part of his incessant exploration, in the 2010s Tom Johnson became particularly interested in rhythm, in a bare and stripped-down form of music, constructed solely based on duration and time. He then began to focus on working with wood blocks, the simplest percussion elements. In the spring of 2017, he wrote *Solution 571*, which, unlike the previous ones, is a quieter piece and was the origin of *Knock on Wood*. The installation is complemented by this score and others, which are performed by the machines created by Riches, one of the forerunners of the Berlin sound art scene and known for his automatic musical instruments and installations.



Imaginary Music. Intertwining Cadenza, 1974
Knock on Wood. [Instalación en Tabakalera](#). San Sebastián, 2020