

Μετατόπισι

Overview

Μετατόπισι is a sound installation designed for reproduction and reinterpretation in any space. It uses 8 autonomous speakers, each playing a unique audio track. The piece is activated by a random participant, referred to as **The Seed**, who initiates and places the speakers in the environment. Each iteration of the installation is unique due to unsynchronized playback and participant choices.

Core Concept

The project centers around randomness, human agency, non-linear soundscapes and psychoacoustics. It emphasizes:

- Organic variation: Tracks are not synchronized.
- Embodied interaction: A human triggers the installation.
- Spatial composition: The arrangement of the speakers is up to the participant.
- Infinite variations: No two activations are the same.
- Psychoacoustics: Random variations of psychoacoustic phenomena.

The concept and sound design of the installation are based on a matured, however continuously evolving method of creating sonic environments. The concept was originally developed for the piece "*ichorous*", presented at the "*Anoikta Pania*" festival in 2023 in Chania (<https://youtu.be/0T22-aMa7lw?si=PiqUU4DEtraTSDwc>).

Each of the eight speakers plays a looping audio segment of 30 minutes, stored on individual memory cards. These loops begin independently, triggered manually, without any sync mechanism, therefore even a tiny difference in activation time (a few milliseconds) ensures divergence.

The performer (or supervising staff) who activates the installation, acts as the algorithmic variable - the "Seed" - determining a unique space-time configuration. The activation delays between speakers are almost always mutually asymmetrical. Unless divisible specifically by 1800 (seconds in 30 minutes), this guarantees that full synchronization of all loops is postponed for thousands of hours - or effectively never happens.

For example:

- If the delays were simple, like 6 or 12 seconds, the least common multiple (LCM) with 1800 seconds, it might return to a full sync in only 30 minutes.
- But using delays like 7, 11, 17, 23, or 29 seconds, which are relatively prime to 1800, the LCM spans into the thousands of hours.

In practical terms, using 8 such unsynchronized delays makes the return of the exact same alignment statistically unlikely for 2,000–10,000 hours (*or approximately 2 months to 2 years*). Thus, the piece functions as an ever-shifting (Συνεχώς Μετατοπισμένο) acoustic environment that supports the aesthetics of timelessness and non-linearity.

Audio Material

The looping audio material is majorly based on sine waves and noise. It includes pink and white noise, pure sine tones and Shepard–Risset glissando rhythms. The latter, developed by sound synthesis pioneer Jean-Claude Risset, creates the illusion of a rhythm that continuously rises or falls in tempo while looping back to its starting point. The use of sine tones also supports the generation of binaural beats. In the installation, when multiple sine tones play concurrently from different speakers, different binaural beats emerge, depending on the listener's position, shifting noticeably with even slight head movements. The material is designed to enhance the final musical output through the natural speaker delay differences and to support all the aforementioned perceptual effects.

Materials Needed

- 8 any size (but preferably small), self-powered speakers with memory cards or usb-drives to hold the audio material. *The low frequency content of the audio material ideally requires speakers with low frequency extension.*
- A computer with a memory card slot or usb slot, to load the material into the cards or usb-drives.
- *Optional:* Selection tools for choosing *The Seed* (a stone, cards, token - this option is open to your imagination).
- *Optional:* Printed instructions for visitors

How to Set Up

1. Load each speaker with the audio loops (30 minutes each).
2. Prepare a quiet, closed, open or semi-open space with freedom of movement.
3. Place the 8 speakers on a central table or designated starting point.
4. Ensure all speakers are charged and ready.
5. Provide a system for randomly choosing *The Seed* (see below).

How to Use (For Visitors / In the following order)

1. Enter the installation space.
2. A random method selects one visitor to be *The Seed*.
3. *The Seed* places the speakers anywhere in the space with one condition:
Speaker placement has to utilize the space **as equally as** possible.
No rush, take your time.
4. *The Seed* activates the speakers one by one, in any order.

Hint: The closer the time between each speaker activation, the closer the output related to the original music arrangement.

5. As each speaker begins playing, a new, emergent soundscape forms.

Min. Performance Time: 30m.

Max. Performance Time: Infinite.

6. Visitors are invited to move around, take their time and listen from different perspectives.

Choosing The Seed (Methods)

- Random Card: One of the installation's entry cards reads:
"You are the Seed."
- The Orb: A symbolic object (like a stone or light) is passed - when a chime or light cue appears, the holder becomes *The Seed*.
- Silent Curator: A facilitator privately selects someone and gives a quiet signal or handwritten cue.

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