SoDa
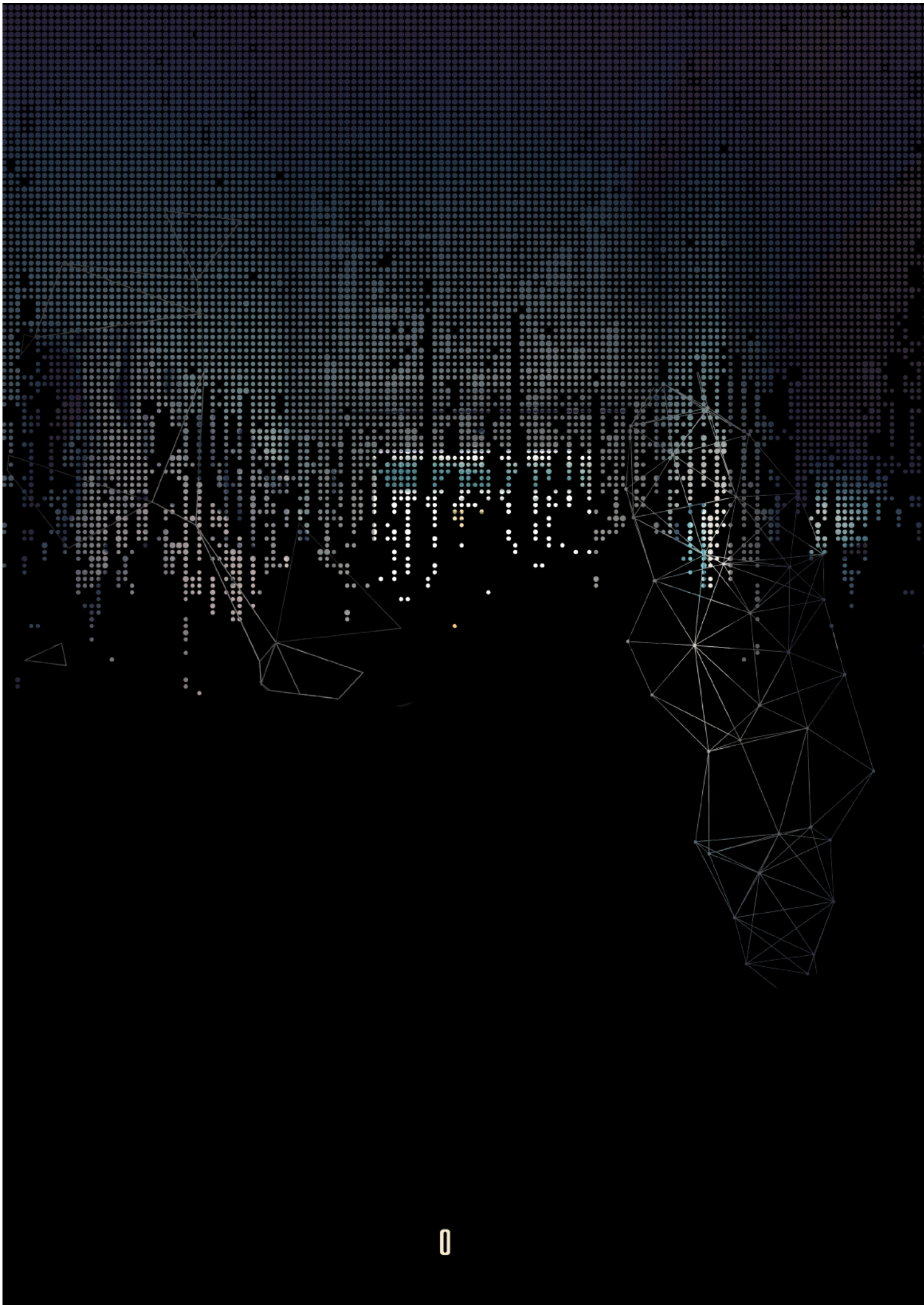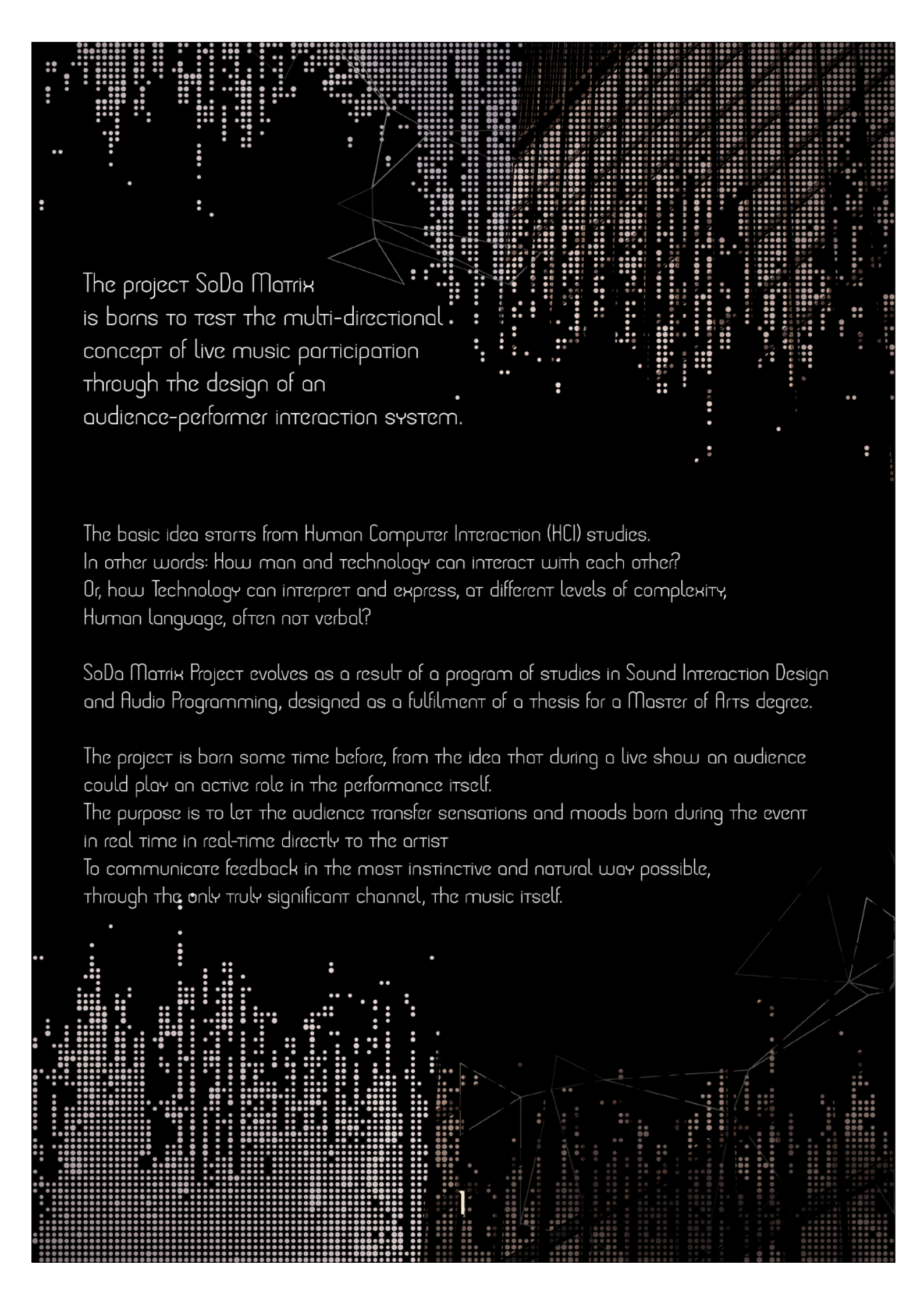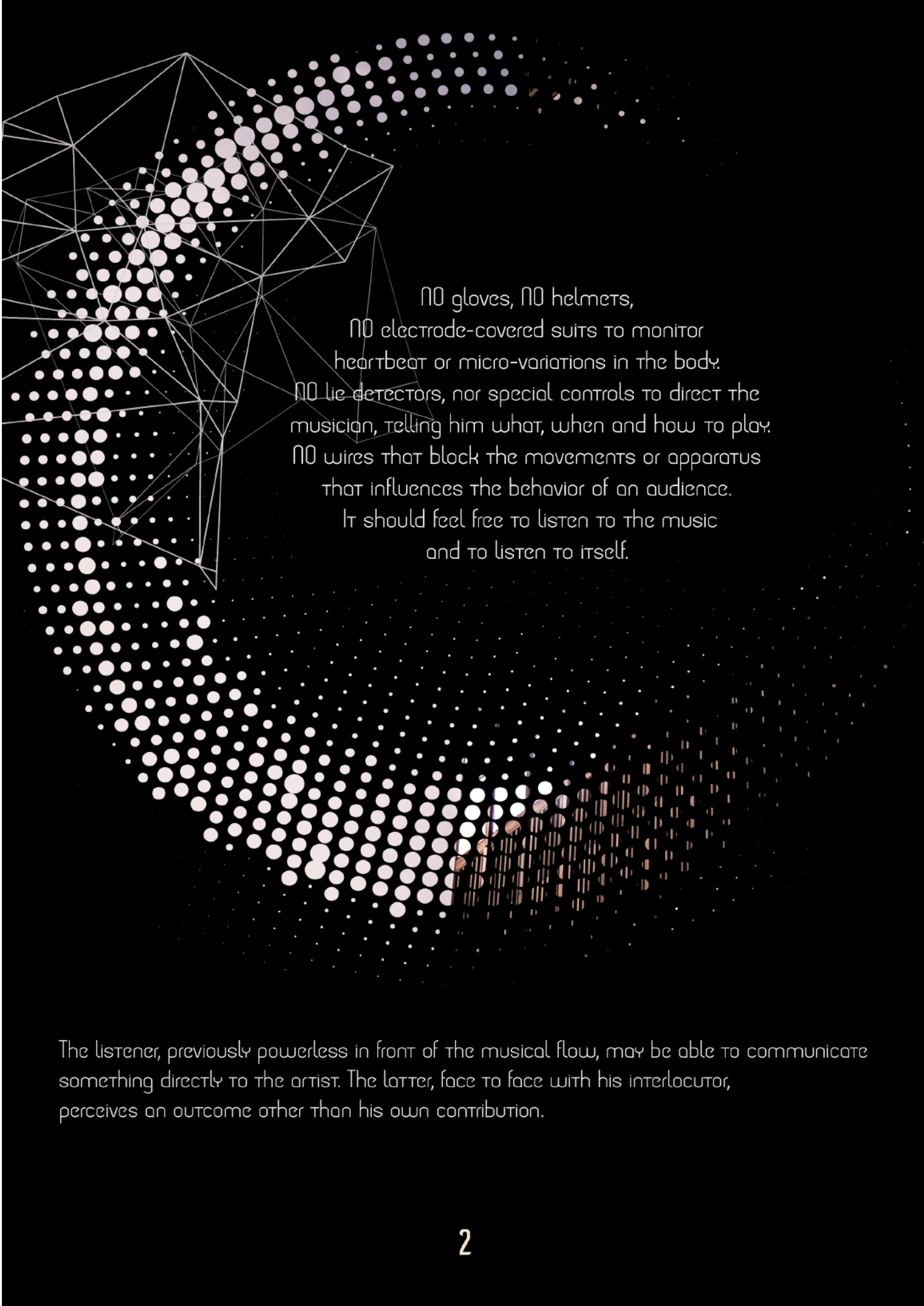
MATRIX

_project

ANDREA
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The project SoDa Matrix
is borns to test the multi-directional
concept of live music participation
through the design of an
audience-performer interaction system.

The basic idea starts from Human Computer Interaction (HCI) studies.
In other words: How man and technology can interact with each other?
Or, how Technology can interpret and express, at different levels of complexity,
Human language, often not verbal?

SoDa Matrix Project evolves as a result of a program of studies in Sound Interaction Design
and Audio Programming, designed as a fulfilment of a thesis for a Master of Arts degree.

The project is born some time before, from the idea that during a live show an audience
could play an active role in the performance itself.
The purpose is to let the audience transfer sensations and moods born during the event
in real time in real-time directly to the artist
To communicate feedback in the most instinctive and natural way possible,
through the only truly significant channel, the music itself.

NO gloves, NO helmets,
NO electrode-covered suits to monitor
heartbeat or micro-variations in the body.
NO lie detectors, nor special controls to direct the
musician, telling him what, when and how to play.
NO wires that block the movements or apparatus
that influences the behavior of an audience.
It should feel free to listen to the music
and to listen to itself.

The listener, previously powerless in front of the musical flow, may be able to communicate something directly to the artist. The latter, face to face with his interlocutor, perceives an outcome other than his own contribution.

Music interaction, as well as the feelings arising from it, must not be clear, simple, obvious, but based on suggestions, micro-variations that can become macro-changes, moments of stasis and moments of evolution, seconds of greater and lesser control, with the awareness of what you are listening to.

The audience communicates through the environment, which collects variations and interpolations between different types of data. Human-machine but also audience-artist interactions are thought to be less artificial and self-conditioned.

The artist and his performance remain
the fulcrum, everything else is only
a method to express that fulcrum.

A software, the MATRIX, mediates the dialogue
between the artist and the audience: raw
information's fluxes are filtered, processed,
sent to the artist and merged
with the music performance.

Some random processes can be introduced to modify the links between
sources and destinations of the MATRIX.

The fate, even in our digital life, still has its proper weight_

This option put the artist under the same conditions of his audience.
He doesn't know the full system paths and he doesn't have all the control.

Control is a condition that you lose in the exact
moment you think you've earned it.

SODA ENVIRONMENT

The SoDa Matrix project involves the use of Arduino microcontrollers, environmental sensors, laser-traps, a Raspberry Pi, a remote camera and a Wifi router.

In detail:
- 1x Arduino UNO connected via Serial Monitor to MATRIX software;

- Environmental sensors:
    - 2x HG-SR04 (Distance sensor)
    - 4x LVMaxSonar (Distance sensor)
    - 2x DHT22 (Temperature and humidity sensor)
    - 1x SHT15 (Temperature and humidity sensor, precision 00);

- 1x Arduino MEGA connected via Serial Monitor to MATRIX software.
It controls 8 laser-trap laser pairs, each consisting of a laser and a photo-resistor, positioned at variable distances, designed to create a floor grid;

- 1x Raspberry Pi 3 Model B, suitably configured to operate as network sniffer on the available Wifi network. It supervises number and syntax of messages that pass through the router, sending data via OSC protocol to MATRIX software;

- 1x remote wifi camera, connected to MATRICE software through Syphon technology;

- 1x Wifi router, acts as a connection between system's devices and a communication channel for any smartphones in the audience. Once logged in, they can have an Internet connection, whose traffic, monitored at a high level, goes through the Network Sniffing device. Alternatively, the smartphone itself can become an additional sensor by sending Triple Axis Accelerometer and Compass data to MATRIX software through OSC protocol.