

PENINSULA ARTS CONTEMPORARY MUSIC FESTIVAL 2016

Frontiers: expanding musical imagination

Embodied iSound:

An Immersive Sound Ride Across Frontiers of Sonic Spaces

Saturday 27 February 2016 | 1730 explanation | Crosspoint, Plymouth University

Saturday 27 February 2016 | 1800 performance | Crosspoint, Plymouth University

This year's theme of the Peninsula Arts Contemporary Music Festival gave composer Marcelo Gimenes the motto and inspiration to create *Embodied iSound*. "Frontiers: expanding musical imagination" is in fact an invitation for reflection upon the limitless abilities of human's musical creativeness: where we come from, where we are going to.

Another source of inspiration comes from the work done by Musicians Without Borders¹, an international organisation based in Amsterdam that promotes programs and activities with local musicians and groups in communities that suffer from the effects of conflict. In MwB's own words: "using the power of music to bridge divides, connect communities, and heal the wounds of war" (MWB 2016).

Embodied iSound is based on these ideas. Music is "organised sound" (Varèse 1968), of course, but it is also a medium through which we all communicate. It is therefore important to understand how this communication happens, why and what we communicate through music. The general idea of the piece is that we can only achieve a better understanding about these questions by mentally, physically and emotionally experiencing what happens when we cross (stylistic, geographical, and historical) musical frontiers. For that reason, the piece requires that members of the audience become active participants (as opposed to just passive listeners) of the musical experience, controlling the sound that is produced from the space where it is projected. Embodiment is not just about the body, it is about action and participation (Dourish 2004).

Technology is what allows this participation, mediating what happens between the physical world (the sound), our minds and personal enjoyment. To achieve that, the piece is supported by a distributed computer system called Levinsky² which includes a smartphone app³ running on participants' iOS devices (the 'app') and a server running on a desktop computer (the 'server').

To better clarify how the installation is organised, Figure 1 below shows a sketch of the space on the ground floor of the Roland Levinsky Building known as the "Crosspoint". Participants holding their smartphones are invited to walk around this space while they listen to the piece.

¹ Musicians Without Borders kindly authorised the use of audio taken from some of its projects as part of the *Embodied iSound* composition.

² Professor Roland Levinsky was Plymouth University's vice-chancellor by the time the composer did his PhD at this institution. The building where *Embodied iSound* will be premiered as well the computer system that supports its performance are named in his honour.

³ Precise instructions on how to operate the app, freely available in Apple's app store, will be given to the participants before the performance.

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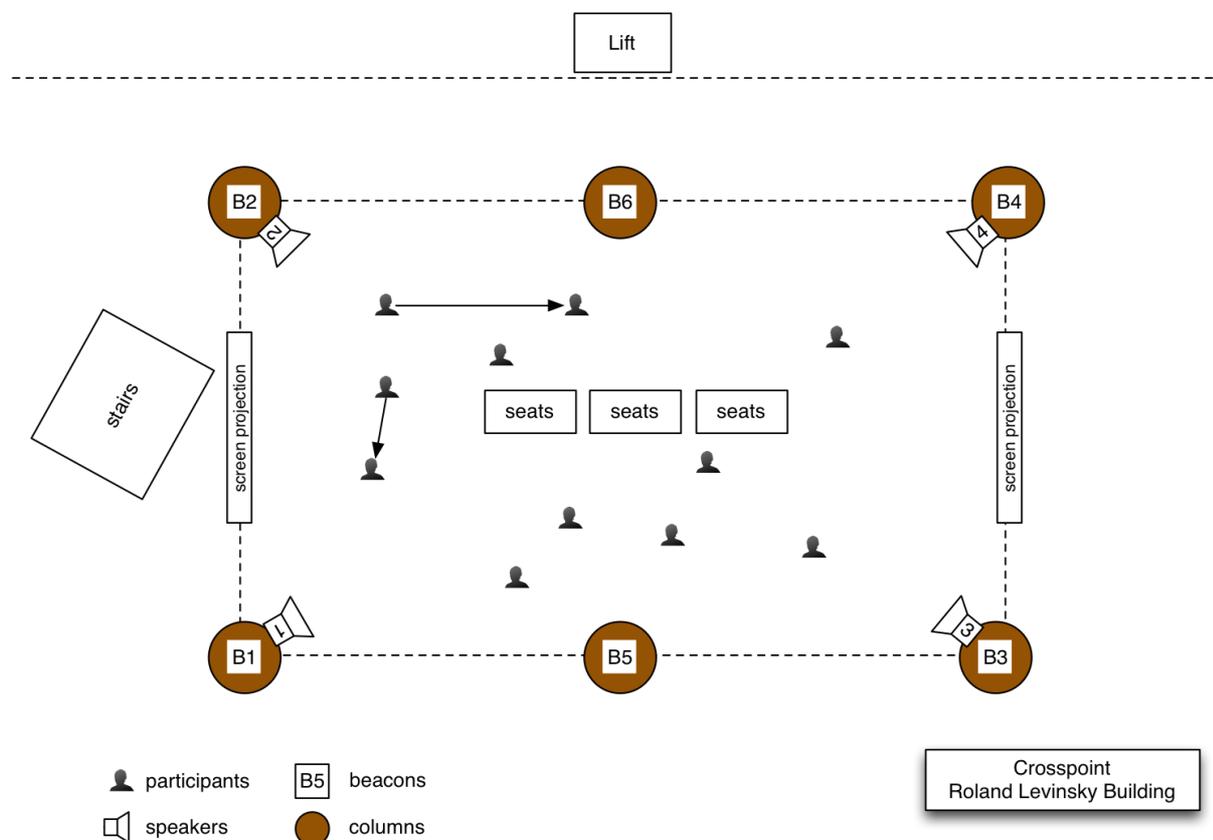


Figure 1: The Crosspoint

Data generated by the smartphones is continuously sent to the server. This includes the participants' proximity relative to the six columns where six beacons⁴ are positioned (one in each column), gyroscope and button taps. In the other direction, participants receive instructions from the server in the form of vibrations, flashes and changes of colour on the background and the button of their devices. Figure 2 below shows the interactive view of the app.

⁴ Beacons are small pieces of hardware that generate BLE (Bluetooth Low Energy) signals used by indoor positioning systems.

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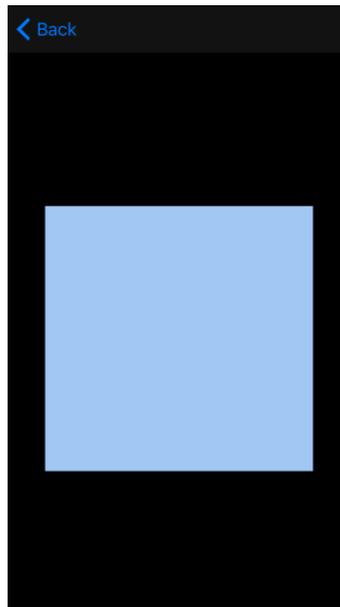


Figure 2: Levinsky Music interactive view

In summary, the Levinsky computer system works as a hub where performance data is transmitted, received and processed. As 'real instruments', smartphones become an extension of the performers' bodies. The server, in the other end of the chain, processes the control data collectively produced by the performers and sends back instructions when appropriate. The expected result is that the movements of the performers (the audience) and their instruments (the smartphones) will determine the sound that is more salient (proximity to the columns/beacons), how it is processed and positioned in the loudspeakers (gyroscope) and what sound is produced (taps on the button).

Embodied iSound was conceived as an interactive experience supported by a two-way communication between the music engine and the performers. Movement and perception are intimately interconnected: what you (the audience/performer) hear influences the way you move and the way you move determines what you hear.

Welcome to this embodied listening experience. Have a nice journey across frontiers of musical imagination.

Marcelo Gimenes

References

Dourish, P. (2004). Where the action is: the foundations of embodied interaction, MIT press.

MWB (2016). "Musicians Without Borders." Retrieved 21/01/2016, from <https://www.musicianswithoutborders.org>.

Varèse, E. (1968). "Edgard Varèse on Music and Art: A Conversation between Varèse and Alcopley." Leonardo 1(2): 187-195.

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Biography

Pianist and composer Marcelo Gimenes' career includes a comprehensive array of activities in different settings and styles, from classical to contemporary music and jazz improvisation. He is particularly interested in exploring music as an interactive medium through which people communicate and interconnect. Marcelo is currently at Plymouth University developing computer music systems and mobile device apps that incorporate unique intelligent generative tools. His research interests include music cognition, evolution and machine musicianship.