

own practice, *Sounding Fragilities* is a remarkable contribution to an interdisciplinary debate around the agency of artistic research. With this synthesis, the editors evaluate how moving beyond the binary of art and science reveals the rich yet fragile territories of artistic knowledge-production and literacy in music theatre.

Sounding Fragilities. An Anthology brings together essays, discussions and interventions on contemporary music, dance and music theatre to offer a polyphony of new approaches to listening, watching, composing and performing. Artistic and academic researchers present reflections and insights into the fragilities of artistic materials, collaborations and the communities that build around live performances. Challenging the idea of isolated composers, choreographers, audience members and academic researchers, they stress instead the interconnectedness of these positions as indispensable elements of thriving performance and research. This feature of all live performance is envisaged by several of the book's contributors as linked to political, democratic thought and ecological or feminist thinking. Sounding out the relationality, brittleness, fragility, transitoriness, and beauty of live performance, this anthology stresses the urgency of coming together and interacting as a foundation for human and political relations; an urgency intensified by the current overlapping crises in politics, health and ecology.

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HOTPO as Multidimensional Performance: The Performer as a SoundBased Composition Method

The intertwining of computation with artistic environments leads to a state of permanent articulation and supports the development of artistic creation. Musical expressions are now based on two

principles: the integration of tradition and technological means; and the rupture of all the contexts that cannot be seen as directly deriving from computer and digital technology. HOTPO was developed over the specialised algorithmic composition software named Slippery Chicken developed by Michael Edwards, written in and functions on the principles of the Common Lisp Object System (CLOS), the Common Lisp facility for object-oriented programming. HOTPO is based on a reference to the Collatz Conjecture, a mathematical proposition that refers to a succession of numbers called the hailstone sequence (or wondrous numbers) because their values usually ascend and descend like hailstones in a cloud. The algorithm used generates section lengths and repeated structures from nine basic rhythm sequences, hence the composer's sequence was 9 28 14 7 22 11 34 17 52 26 13 40 20 10 5 16 8 4 2 1. This piece explores microtonal relations of tone pitches and layers of multiphonics permutations. The multiphonics were organised into layers of tremolos, producing timbral changes and being selected thru a process that uses two different methods and software developed by Henrique Portovedo. The first method was implemented, SaxMultis, which allows the recording of all multiphonic timbral permutations and their cataloging; this gives, as well, the possibility of generating aleatoric positions of key combinations. The second method, Multi2Chord, analyses the spectrum of each multiphonic permutation and translates it into musical notation. Understanding how emerging digital musical technologies trace their concepts, design and functionality to practices in the current cultural epoch will bring to light a study of new-media archeology, conceptual epistles and performative paradigms, directed, in other words, to the study of how the new technologies of mixed music-making trace their design to the practices of material, symbolic, signal inscription and how practice is transforming and leading to creation.

Biography

Henrique Portovedo was awarded a Summa Cum Laude PhD in the field of Science and Technology of the Arts (Performance and Computer Music) at the Portuguese Catholic University funded by

FCT. Portovedo was a Fulbright Researcher at the University of Santa Barbara California, Erasmus Researcher at the University of Edinburgh, visiting researcher at the ZKM Karlsruhe and visiting researcher at McGill University Montreal. Master in Music Performance with Distinction by Trinity Laban London and Master in Music Pedagogy by the University of Aveiro, he was awarded several prizes including by the Portuguese National Centre of Culture and the British Society for Education Music and Psychology. As a performer and intermedia artist, he has presented multidisciplinary creations at festivals worldwide, while being a soloist with some of the most relevant contemporary ensembles in Europe. Currently, Portovedo is professor at the University of Aveiro and Guest Professor at the Real Conservatorio Superior de Musica de Madrid.