

Sonic Construction

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Biographical information

Jon Drummond is a Sydney based composer and performer. His creative work spans the fields of instrumental music, electroacoustic, interactive, sound and new media arts. Jon's electroacoustic and interactive work has been presented widely including the International Computer Music Conferences (Denmark 1994, Canada 1995, Greece 1997, China 1999, Singapore 2003), Electrofringe, Totally Huge New Music Festival, Darwin International Guitar Festival and the Adelaide Festival of Arts. Many of his acoustic and electronic compositions have been commissioned and performed by leading Australian performers and ensembles including australYSIS, The Song Company, Ros Dunlop and Kathleen Gallagher. Recently Jon has been exploring the use of environmental signals from the natural world as generative devices for creating electroacoustic sound - video tracking the fluid motions of water in "Sonic Construction" and the motion of air through the use of kites in "Sounding the Winds".

Description of Piece

Inspired by the swirls, vortices and lemniscate like patterns created by moving water and other fluids, Sonic Construction uses the movement of coloured dyes in a semi-viscous liquid to generate and control sound. The work is performed by dropping different coloured dyes (red, green, yellow, blue) into a clear glass vessel filled with water, made slightly viscous through the addition of a sugar syrup (Figure 2). Through the use of video tracking, the speed, colour and spatial location of the different coloured drops of dye are analysed as they are dropped into the glass vessel and subsequently expand, swirl, coil and entwine in the water. The control data derived from the video tracking of the ink drops is used to define both the shape and the way in which individual grains of sound are combined using FOF (Fonction d'Onde Formatique translated as Formant Wave-Form or Formant Wave Function) synthesis [1] [2], to create a rich and varied timbral sound environment. In developing Sonic Construction I sought to create a system that would provide a sense of connection with the interactive processes being employed and at the same time to create a system over which I had only limited direct control; ideally being influenced by the system's responses as much as I was influencing the system.

Timbres produced by the system include bass-rich pulse streams, vocal textures and a variety of bell like sounds. The fluid movement of the coloured dye in the liquid is further used to spatialise the outputs of the FOF synthesis. The video captured of the dyes in the liquid, used for motion analysis and colour matching, is also projected back into the performance space, slightly processed using contrast, saturation and hue effects (Figure 2).



Figure 1 Performance interface for Sonic Construction.



Figure 2 Sonic Construction—re-projected image into the installation space.

- [1] Rodet, X. (1984). Time-Domain Formant-Wave-Function Synthesis, *Computer Music Journal*, 8 (3), 9–14.
- [2] Rodet, X (2000). Sound Analysis, Processing and Synthesis Tools for Music Research and Production, *In Proceedings of the 2000 13th Colloquium on Musical Informatics (CIM 2000)*. L'Aquila, Italy.