Fools Paradise: A Performance Work for Virtual Reality, Electronic Sound, and Acoustic Instruments by Stephen Dembski and Paul Hertz

Abstract

Fools Paradise is a VR installation and performance based on texts by visionary poet and artist William Blake. Forty-eight short texts are associated with human figures embedded in an island landscape that is at once a vast book, a sculpture garden, and a network of pathways through language and music. Participants in the installation wander over the landscape, triggering multi-modal events. In performance, musicians and a VR performer explore the work in depth, to reveal hidden structures, symbols, and narratives.

Artists

Fools Paradise is a collaborative project by Paul Hertz, a visual artist working with digital intermedia, and Stephen Dembski, a composer, performer, and conductor of new music.

Groundwork

As a composition, *Fools Paradise* is grounded in abstract notational structures that help to determine its visual architecture, musical material, and event-flow. In other words, it is an intermedia artwork, where events in one sensory modality may be mapped onto events in another modality. At the same time, different media are left free to display their own unique qualities, without strict mapping. The degree of mapping at any given point is part of the compositional process.

This approach to composition is peculiarly apt for digital technology. Thanks to digital technology, compositional structures can operate at all levels of granularity and with a degree of abstraction that places all media on the same plane, and performances can attain an unprecedented degree of precision and synchronicity of events.

Though we embrace technology to realize our art, we are acutely aware of the twin necessities of approaching technology from a critical point of view and of engaging culture as a historically rooted enterprise. The selection of texts from Blake's *The Marriage of Heaven and Hell* presents a critique of the tyranny of religious institutions and a plea for personal freedom of belief that resonates today. Our approach to digital media—the blend of live acoustic music with electronics, the "hand-painted" texture maps for the VR landscape, and the use of VR as a performance interface where gesture controls sound processing—seeks to place human presence at the core of culture. As artists, we create first of all, experiences—not precious objects or "cultural values." We honor Blake as a multimedia artist *avant la lettre*, a poet who melds language with printed and painted images in his books. We place ourselves within tradition that we may challenge our present moment as he challenged his own historical moment.

Libretto

The libretto for *Fools Paradise* consists of 48 short texts from "The Proverbs of Hell" from William Blake's illuminated book *The Marriage of Heaven and Hell*. Each proverb corresponds to a sculptural human figure in the virtual landscape. The figures and paths between them are derived from the underlying structures for intermedia composition.

Composition

We have chosen to use an intermedia strategy for our collaboration in creating *Fools Paradise*. As employed by Fluxus artist and theorist Dick Higgins, intermedia designates a compositional process that works across the boundaries between media or even fuses media. It extends the creation of form across media or sensory modalities without necessarily promoting a tight coupling of events. At the same time, intermedia implies something more specific than multisensory opera. It is not so much a "total artwork" as a hybrid artwork.
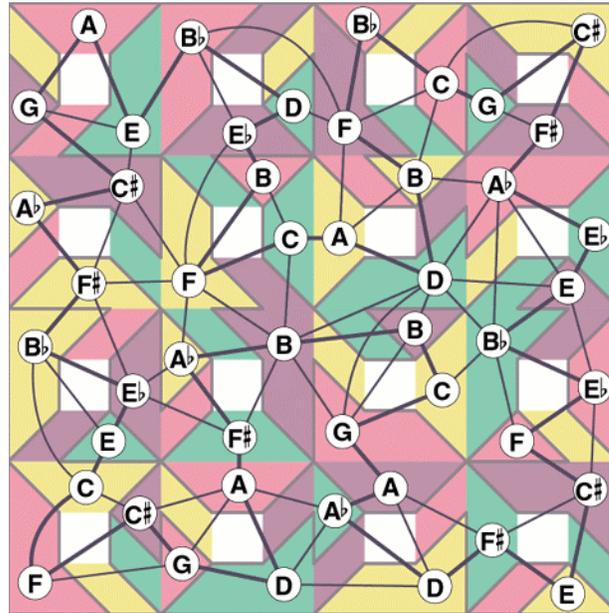
A diagram of some of the underlying structures for the composition here represented as geometric shapes, colors, topological connectivity, and pitch classes.

We plan initially on using as base material a generative system that Paul Hertz has used in graphic works, performances, and intermedia installations. The diagram above can give you an idea of how we are working with the system for *Fools Paradise*. Examples of the generative system and its concrete productions may be found in Hertz's online portfolio, see links at the end of this document.

The topology of the graph in the above diagram is directly represented in the virtual landscape: each pitch class node represents a sculpture, and the edges connecting pitch classes are paths from sculpture to sculpture. In the musical domain, the nodes represent available musical material for each song in the Fools Paradise song cycle, and the edges represent transition probabilities for inclusion of material in the composition. The pitch classes here only hint at the final form of the compositional material for music. Developing that material is our most immediate work-in-progress. We're dividing up the work of collaboration roughly as follows:

Hertz: 2D and 3D graphics, Software development, Interaction design, and Electronic sound processing for performance
Dembski: Musical Composition, Small Ensemble Direction for Performance

It's expected that Stephen Dembski, in composing music for the final realization of the work, will reinterpret and select parameters as best fits his compositional purposes and style,

and that he may contribute new material that Hertz can in turn interpret in graphical or interactive structures.

Within the artistic freedom granted to both artists, intermedia parameterization acts as a sort of scaffolding for the work, and as a tool for generating compositional material. Its importance resides not in the literal values assigned to parameters, but in the establishment of correspondences as a point of departure for collaborative composition.

Virtual Reality Scene Design

View of the VR landscape, which is the performance interface

Our virtual world is an island in the shape a tongue. Upon it rises a rocky, gently tilted mesa: an open book whose pages are geological strata. In the high end of the mesa a cave opens out onto a bracken slope. From the cave, steps mount to the top of the mesa. Upon the mesa rest two massive stone figures of a man and a woman, eroded by time. Smaller, life-size human figures populate the meadow between the larger figures, one figure for each of 48 songs in the *Fools Paradise* song cycle. Pathways across the hillside connect the figures into a network whose underlying topology also governs the musical materials.

An aerial view from the tip of the island/tongue

Water flows from under the figures and converges into a stream that flows down the mesa and tumbles over the edge to flow to the tip of the island and into the surrounding sea. The water speaks in a confused murmur that clarifies into music when the participant/performer approaches and brings to life one of the 48 figures.

The performance version is designed for live musicians, voice, real time electronic sound processing, and a "VR Performer." The VR performer explores the VR landscape as a knowledgeable guide. The audience sees the virtual world from the point of view of the VR performer, on projection screens in the performance hall. The VR performer's location within the virtual world determines which section of the score the musicians are executing and controls aspects of the sound processing.

Execution of the work proceeds more or less as follows (see additional illustrations, page 5):

Prelude: Our point of view begins within the darkness of the cave and emerges into the light of the bracken slope.

Passage: We climb the stairs to the top of the mesa.

Song cycle: We move to a specific sculpture which serves as the entry point, and then follow the paths over the meadow, from sculpture to sculpture. Each sculpture presents several choices of path. Each visit to a sculpture leads to the performance of a song. Except for the entry and exit points, the order and number of songs performed is up to the VR performer. At the entry point, the song's text is: "Eternity is in love with the productions of time."

Interlude: A visit to the edge of the waterfall (water/language flowing through time and memory back to its source).

Song cycle: We visit more sculptural figures/song performances within the meadow. Exit point: "No bird soars too high. if he soars with his own wings."

Coda: Rising through the clouds, we look down on the island. The massive figures turn towards each other and join hands as we sail out of sight.

VR/Audio Interface and Interaction Design

Custom software makes VR a "performance interface" for electronic music. *Fools Paradise* is being developed using the CAVELib and the Ygdrasil scripting environment built on the CAVELib and OpenGL Performer. MaxMSP is used for sound processing. Software developed by Paul Hertz handles sound spatialization in MaxMSP under the control of scripts in Ygdrasil (or any other application that implements the Open Sound Control protocol) via a network connection. The software can be modified to handle any desired form of audio signal processing. The sound spatialization tools and Ygdrasil code are bundled as "YgMaxTools." The alpha release of the software is currently available for download on request to the author. Future releases will be posted on the Center for Art and Technology web site, http://www.cat.northwestern.edu/.

Resources

http://collaboratory.nunet.net/phertz/paradise/ — materials on the development of Fools Paradise (part of it incorporated into the document you are reading).

http://collaboratory.nunet.net/phertz/portfolio/ — portfolio for Paul Hertz

http://www.scattershot.org/dembski/ — portfolio for Stephen Dembski

http://collaboratory.nunet.net/phertz/portfoli/pdf/ignotheo.pdf — a generative system for intermedia composition

http://www.cat.northwestern.edu/Projects/project2001.htm — documentation of *The Alchemist's Kitchen,* a VR gallery installation using the YgMaxTools

The cave, where the performance begins

Some of the small sculptures in the hilly meadow.
Beyond them looms the mass of one of the huge figures on either side of the meadow.

An early study for the meadow