Paul Hertz [1]
ignotus@gmail.com

Stephen Dembski [2]
dembski@mac.com

[1] Independent Artist, Chicago, USA

[2] Independent Artist/Composer
New York City, USA

Fools Paradise:
Intermedia in VR

Keywords: Virtual Reality; Intermedia; Music; Poetry.

Abstract:

Fool's Paradise is a virtual world based on the "Proverbs of Hell" of English poet and artist William Blake. Intermedia data structures inform its visual and musical composition, developed in collaboration between artist Paul Hertz and composer Stephen Dembski. Visually, *Fools Paradise* riffs on the landscape and architecture of an English Romantic garden and the changing aesthetics of VR from the CAVE to current game engines and VR goggles. Perched on a highland in the form of an immense open book with a stream of language/water running down its center, the virtual world offers forty-eight interactive pavilions linked by a network of paths. Each pavilion interprets a proverb as a song composed by Stephen Dembski for soprano, flute, cello, and spoken voice, as a mask (by Mark Klink), and as calligraphy (by Koy Suntichotinun). Blake's proverbs offer a critique of intolerance and a plea for intellectual freedom that still resonates today. *Fools Paradise* pays homage to Blake as an intermedia artist *avant la lettre*, an artist who melded poetry with image in his handmade books.

1. CONCEPT AND DEVELOPMENT

An earlier version of *Fools Paradise* was created as a "VR Performance" for a passive audience in 2004, using the CAVE software and Max/MSP. A dancer performed the navigation of the virtual world, improvising her pathway, triggering cues for live musical performance as she moved and explored. The new version of *Fools Paradise,* created in the Unity game engine, operates as an immersive 3D intermedia experience with elements of game play. It can be explored using VR goggles and navigation devices or on a computer monitor, using the mouse and arrow keys for navigation.

Visually, *Fools Paradise* riffs on the landscape and architecture of an English Romantic garden and the changing aesthetics of VR from the CAVE to current game engines and VR goggles. The garden is perched on a stratified rocky highland in the form of an immense open book with a stream of water and words flowing in the crease between its two sheaves of pages. The book rests on a tongue-shaped island in a sea of water and stars. Forty-eight interactive pavilions linked by a network of paths spread across the garden landscape. In each pavilion masks, calligraphy, and music interpret proverbs from William Blake's "Proverbs of Hell," from his illuminated book *The Marriage of Heaven and Hell* (Blake 1790, Erdman 1988). The music consists of short

Fig. 1. General view of the garden, pavilions and masks.

songs for soprano, flute, cello, and spoken voice. Some of the terrain geometry was carried over from the 2004 version. The VR architecture and masks are entirely new for the 2018 version. The pavilions, paths, masks and garden terrain — the "artificial world" — imitate early VR with low polygon count and reliance on texture mapping. The sky, plants and terrain beyond the highland appear as the "natural world" but in effect belong to current "realistic" physically based rendering VR technologies. The 2004 performance offered a similar contrast, between "natural" live acoustic music and an "artificial" world explored by a dancer. Both stagings of Blake's "Proverbs of Hell" look to the poet's concern with the collision of nature and human industry, evident in his texts and his printing method "that incorporates aspects of the apparently incompatible alternatives of machine-made print and handmade manuscript." (Hammond 2016, 59) The songs and voices in the new version, from studio recordings created after the original performance, are triggered and remixed by the participant's movement.

The software is due to be published in June 2018 by the Digital Museum of Digital Art (http://dimoda.org). After its initial release, it will be available for free download under a Creative Commons or similar license.

2. COMPOSITION AND FORMAL STRUCTURE

Fig. 2. Spatial and musical structures and virtual world garden map for Fools Paradise.
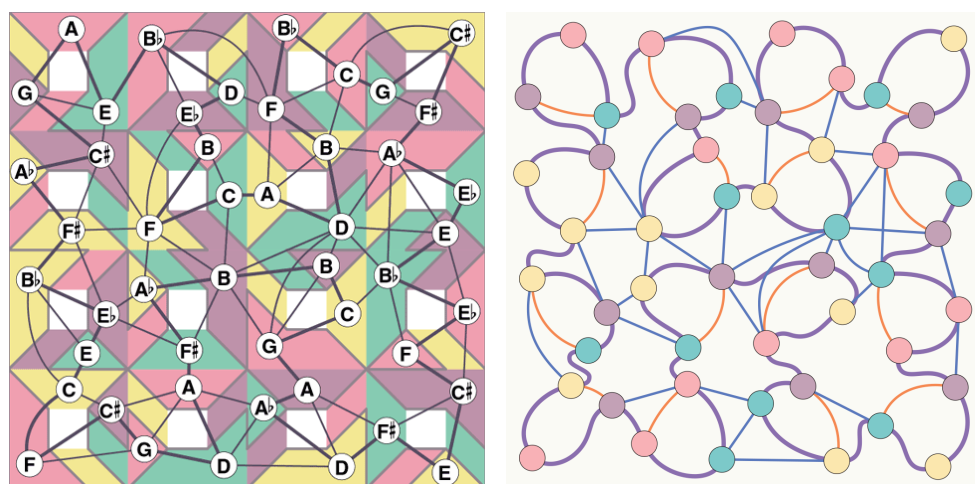
As a composition, *Fools Paradise* is grounded in abstract notational structures that help to determine its visual architecture, musical material, and event-flow. In other words, it is an intermedia artwork, where events in one sensory modality may be mapped onto events in another modality. At the same 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 events can attain an unprecedented degree of precision and synchronicity.

Fools Paradise was developed and directed by a visual artist, Paul Hertz, working in collaboration with a composer, Stephen Dembski. The artist had developed a body of theory for intermedia composition, including "parametric spaces" for generating music and performance (Hertz 1999), which proved to have useful analogues to the composer's theories of extended tonality (Dembski 2006). For their collaboration, the artist and the composer developed a database of abstract notational structures that functioned as a tool for making decisions about material in the virtual world and in the musical composition. Thus, the diagram above plots the relative positions of event nodes in the virtual world and it also represents the available tonal material at each node. Colors and other structures not shown in the diagram code other possible

parameters. The composer adhered strictly to the use of tonal material and played freely with its sequencing and duration for each song. The visual artist distributed nodes (pavilions) in space within a strict metric but played more freely with assigning parameters to determine colors and textures used at the nodes. The structures underlying *Fools Paradise* are not intended to impress the player or viewer: rather, they are the scaffolding that supports discourse between visual and auditory disciplines to bring the work into existence.

An artist noted for his work with glitched 3D modeling, Mark Klink, was invited to create masks associated with the proverbs for the new version. Texture maps on the masks include Klink's own work, Hertz's scanned watercolors for the masks in the first version, and textures created from vocal formants (essentially audio signals mapped to a space-filling curve) using software created by Hertz. A fourth artist, Koy Suntichotinun, created calligraphy for the texts from Blake.

3. INTERMEDIA AND VIRTUAL WORLDS

According to poet Dick Higgins the word *intermedia* "appears in the writings of Samuel Taylor Coleridge in 1812 in exactly its contemporary sense — to define works which fall conceptually between media that are already known." Coleridge was a contemporary of Blake, and though the two may not have met, we may safely assume that the fusion of media was a concept familiar to artists of the time — Charles Baudelaire's *correspondances* provide a ready example. Indeed, Higgins asserts that intermediality has been a possibility since the most ancient times (Higgins 2001). Blake's dazzling metaphysical system, perhaps the most daunting aspect of his long poems, is only sketched out in *The Marriage of Heaven and Hell*, but therein lie its charm and accessibility. Though Blake's system was conceptually coherent, the arrangement and printing of the plates in the *Marriage* "is quite unsystematic and capable of much alteration—which, in fact, Blake performed in a few cases (Damon 1969, 90)." We can discern aspects of hypertext in Blake's reordering of the plates and intermediality in the fusion of printed word with image in all his illuminated books. It may not be too much of a leap to suggest that his metaphysical system served a purpose similar to the formal "parametric spaces" used to construct *Fools Paradise*. In both instances, a coherent system of symbolic concepts opens a portal to intuition. Intuition is tasked with creating the work from the system, and the work is a virtual world, in poetic or visual or musical form. We state this not so much to establish our kinship with Blake, though we feel it, as to signal the rootedness of our effort in cultural history. If we are doing something new, it is within the context of digital media and virtual worlds.

In that context, we have been cognizant from the start of our project of the need to develop a digital intermediality that addresses not just data streams and transcoding, but higher level structures. Light shows of the 1960s translated analog signals from one medium to another well before digital technology determined that binary numbers could represent pixel color as readily as audio frequency. John Whitney's *Digital Harmony* signaled the potential of digital media to encode formal musical concepts into abstract animation at a depth that previous visual music could not attain. In contrast to the transcoding and glitch art of recent decades that used data streams as raw material, we have been concerned with how the organizing structures of musical and visual art can be interchanged in symbolic form. "In the process, we have discovered a fruitful way of collaborating that offers a formal armature for composition and also opens portals to individual and collective intuition and improvisation. VR technology in its current phase (VR 2.0) offers possibilities that were not available in the VR of the 1990s and 2000s (VR 1.0). Current gaming engines and accessible hardware and software provide programming interfaces that expose high level structures that were not built in to early VR or interactive multimedia applications. To give but one example: audio implementations in VR 2.0 typically expose an

Fig. 3. Eternity is in love with the productions of time.

entire remix and filtering suite both as a digital mixer and as an application programming interface (API). This is a result of the influx of capital into gaming, with its demands for hyperrealism. We may be grateful for that, even as we strive for an insistently different aesthetic. The situation allows us to dream of VR as a popular medium that will open the way for experimentation in intermedia far beyond visual music or Whitney's elegant accomplishments. As a template for artistic collaboration, we believe this approach offers many benefits. The art that results from it will be in the hands of a new sort of participant, a player rather than a viewer.

Fools Paradise approaches technology from a critical point of view and engages culture as a historically rooted enterprise. Blake's *Marriage of Heaven and Hell* presents a critique of religious and moral oppression and a plea for freedom that resonates today. New media do not displace old; rather, they engage each other in complex feedback loops. As artists, first of all we create experiences — not precious objects or questionable "cultural values." We honor Blake as an intermedia artist *avant la lettre*, an artist who melds poetic language with printed and painted image in his books. Like him, we seek to meld different languages into a robust and complex whole, and to open formal precision to intuitive exuberance.

Music credits:

Fools Paradise I, 2004: Juliet Petrus, soprano; Mackenzie Danner, flute; Danah Albaum, cello; Stephen Dembski, conductor.

References:

Blake, William. *The Marriage of Heaven and Hell*, 1790. Illuminated book in various unique printings, scanned images at the William Blake Archive. http://www.blakearchive.org/work/mhh

Damon, S. Foster. *William Blake: His Philosophy and Symbols*, 1924, reprinted 1969. London, UK: Dawsons of Pall Mall.

Dembski, Stephen. "An Idea of Order," *Perspectives of New Music* 43, no. 2/44, no.1 (summer 2005/winter 2006): 403-424.

Erdman, David V., ed. *The Complete Poetry and Prose of William Blake*, 1988. Source of our setting of the "Proverbs of Hell," with permission of the William Blake Archive. http://erdman.blakearchive.org/

Hammond, Adam. *Literature in the Digital Age: An Introduction,* 2016. Cambridge, UK: Cambridge University Press.

Higgins, Dick. "Intermedia," New York City: Something Else Press, 1966, 1981. Reprinted in *Leonardo*, Vol. 34, No. 1 (2001): 49-54. The MIT Press.

Hertz, Paul. "Ignotheory," 1999. Presentation notes from SIGGRAPH 1999, Los Angeles, for panel "Algorithmics and Patterns from Life." http://paulhertz.net/worksonpaper/pages/ignotheo.html

Whitney, John. *Digital Harmony: On the Complementarity of Music and Visual Art*, 1980. Peterborough NH, USA: Byte Books