Corpus Corvus: Stereoscopic 3D Mixed Reality Dance Performance

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ABSTRACT

Corpus Corvus is a mixed reality performance artwork that utilizes stereoscopic projection, motion capture animation, an integrated physical/media choreographic vocabulary, and electroacoustic composition to explore the Pacific Northwest Native American myth of the raven as god and thief who steals the sun and creates the universe. Formally, the work explores the relationship between movement of a physical body and stereoscopic animation in a physical/digital three-dimensional image field. The animation is generated from motion capture data and kinesthetic media composition processes based on physical choreography. Through precise temporal alignment and stereoscopic theatrical effect, the projected animation is perceived to surround the performing body in physical space. The art/research process contextualizing Corpus Corvus is a practice-based exploration and discovery of an emerging poetics that extends the human sensory system into immersive media perceptual hyperspaces. This paper illuminates the process of research, manifestation, and discovery that informs the artwork and its poetics.

Keywords: 3D, Augmented Reality, Dance, Embodiment, Immersive Media Artwork, Mixed Reality, Motion Capture, Mythos, Performance, Stereoscopy

INTRODUCTION

Corpus Corvus is a mixed reality performance artwork that utilizes stereoscopic projection, motion capture animation, an integrated physical/media choreographic vocabulary, and electroacoustic composition to explore the Pacific Northwest Native American myth of the raven as god and thief who steals the sun and creates the universe. Formally, the piece explores the relationship between movement of a physical body and stereoscopic animation in a physical/digital three-dimensional image field. The animation is generated from motion capture data and kinesthetic media composition processes based on physical choreography. Through precise temporal alignment and stereoscopic theatrical effect, the projected animation is perceived to surround the performing body in physical space. This physical-virtual dance is completed by a sound score based upon ravens’ vocalizations abstracted through human imitation and technological processing.

The title Corpus Corvus refers to the body of the raven. The piece traverses the environment of the Corpus Corvus through dilations into ten corporeal dimensions: formation, throat, wing, eye, claw, belly, brain, heart, spine, dissolution. Each of these segments ar-
articulates a densely integrated three-dimensional kinesthetic-audio-visual composition.

The totality of the performance/technology infrastructure is conceived as an extension of the human nervous system, an expansion of the spine – the epicenter of sensation. The sensate body of the Corpus Corvus loops from the wholly kinesthetic spine of the performer-as-animal through its extended digital peripheries. This pulsation is the lifeforce of the Corpus Corvus, and reaches toward an integrated continuum of sensate embodiment that extends from the animalic to the immaterial.

Corpus Corvus is performed by a solo dancer. The performance space consists of a 9’ diameter circular scrim with stereoscopic projection, theatrical lighting, and stereo sound. The artwork premiered in Seattle, Washington, USA, on February 5, 2011.

Corpus Corvus was developed as a doctoral dissertation at DXARTS, the University of Washington’s Center for Digital Arts and Experimental Media. The piece was created by physical/media artist Heather Raikes in collaboration with composer Richard Johnson Logan-Greene, sculptor James Ryan, lighting designer Peter Bracilano, and dancer/choreographers Eric Geiger and Julie Funk. Manifestation of the artwork encompassed an array of collaborative research infrastructures, including DXARTS, the University of Washington’s Department of Computer Science & Engineering, the Performative Computing Lab in the Center for Research in Computing & the Arts (CRCA) at the University of California San Diego, the University of Washington Dance Program, and the Department of Theatre & Dance at the University of California San Diego.

Context for Research

Throughout history, the evolution of performance has been catalyzed by macrocosmic conceptions, theories and systems of the theater. Relevant examples include Aristotle’s Poetics, Richard Wagner’s Gesamtkunstwerk, Antonin Artaud’s Theater of Cruelty, the futurist Synthetic Theater, the Bauhaus Total Theatre, the Dialectical Theater of Bertolt Brecht, Erick Hawkins’ Theater of Perception, Richard Schechner’s Environmental Theater, as well as countless other systems of performative inquiry that may or may not have codified names. As theater is fundamentally a medium of synthesis that contains and orchestrates a vast number of sensory elements and dynamic possibilities, there is a deep logic to the development of a poetic system that defines parameters for theatrical exploration, organizes the process of composition, and ultimately produces both works of art and a historically transformative aesthetic.

The art/research process informing and contextualizing Corpus Corvus is a practice-based exploration and discovery of an emerging poetics that extends the human sensory system into immersive media perceptual hyperspaces. Four primary research trajectories constitute the technical and artistic foundations for the artwork: mixed reality performance, contemporary mythos, expanded embodiment, and immersive media composition. This document summarizes the process of research, manifestation, and discovery within each of the four trajectories – toward the macrocosmic objective of illuminating the technical, aesthetic, and intellectual underpinnings of this 21st century artwork. The approach reflects DXARTS art/research methodologies, building upon the integral idea that new form emerges from excavations into deep historical bedrock in tandem with technological innovation and forward-thrusting probes. Accordingly, elements of form and technical processes integral to the construction of Corpus Corvus are contextualized by the historical root systems that support and inform the creation of the work.

The emerging poetics is, arguably, a whole greater than the sum of its parts, and something that can only be fully expressed in the experience of the artwork. Nonetheless, the documentation of Corpus Corvus represented here provides a comprehensive account of its process of becoming – with the intention of both articulating groundwork for its ensuing poetic system, and evoking a sensate understanding of its experiential intent.
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