

TO THE PEOPLE:  
COMMUNITY ENGAGEMENT WITH MULTIMEDIA PERFORMING ARTS THROUGH  
PORTABILITY AND INTERACTIVITY

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## Abstract

Observations are drawn from numerous events of two portable and experiential community participation multi-media environments, *Big Tent* and *Hourglass*. These concepts, created and realized by the co-authors, focus upon broadening active public engagement with cross-disciplinary arts. Approaches to venue design and artistic content seek to diversify event location possibilities and encourage community involvement. Specific advantages are noted for both *Hourglass*, a community dance participation event of immersive live acoustic/electronic music and interactive video, and *Big Tent*, a portable large scale 360-degree sound and video performing arts venue for audience interactivity.

## Introduction

Contemporary daily life is saturated with multi-mediated experience, and thus it is only natural audiences gravitate towards artistic forms reflecting, even amplifying, this reality. Meaningful arts experiences, with combinations of sound, visuals, and movement, are certainly nothing new or novel, as traditions from the opera and ballet, to the circus and town parade have all found appeal in both narrative and abstract artistic creations for many generations. The ubiquity of television, movies, and digital games -- all relatively inexpensive and extremely approachable -- demonstrate how so many people are exposed to multimedia arts. Further, there is increasing pressure to satisfy the desire for unique, individualized experiences and giving a sense of agency to the consumer. While routine and ready access to these experiences is acknowledged, there remains many soft barriers constraining the breadth, and thus the creativity, of artistic experiences reaching the community.

*Big Tent* and *Hourglass* both focus on how to expand consequential engagements between community and multimedia artistic works of sound, visuals, and dance. They share many precepts, from adaptability to event location, full immersion atmospherics, absence of performer/audience divisions, de-stratification of viewing angle, use of interactive electronic devices, and facilitations encouraging physical involvement. These components are all in purpose of creating more approachable and active audience experiences, while doing so with artistic content stretching beyond the mainstream and the constraints imposed by the economic demands of the consumer marketplace.

Multimedia digital arts frequently get bound up in two objectives: creativity of artistic content across mediums, and pushing technical boundaries of hardware/software as used in presentation. Both of these stem primarily from the relatively short history of inter-media and

interactive multimedia art (compared to other non-digital artistic forms). Given the need to explore the domain both artistically and technically, much of the creative work becomes concerned with novel solutions, leading to an outlook seeking to validate the work based on innovation, potentially at the expense of presentation, aesthetics, and experience. But, as necessary as these investigations are, questions of venue as artistic instrument, accessibility of live performance presentation, and how artistic content engage attendees as creative agents are all requiring more consideration and innovation. By extension, when a member of the public overcomes the usual inhibitions to *actively* participate in an arts event (as with use of handheld controllers generating visual and sound content in *Big Tent*, or the embodiment of sound through improvised dance movement during *Hourglass*) deeper and more sustained connections with the collective artistic content are possible.

## **Historical Precedents**

The circus developed the Big Top, in many ways an analogous multi-media venue with little reliance upon existing infrastructure and an egalitarian attitude to the attendees. As a portable multi-media site it could project its own ‘aura,’<sup>1</sup> bringing the potential to uniquely define (tabula rasa) without accommodating other institutions (such as the elite history and stigma of the opera and theater hall). The Big Top also presented ‘in the round,’ with a central ring and multiple audience perspectives of equal quality, unlike the intentionally hierarchical seating arrangements of brick and mortar venues. This pathway for venue development has fallen behind the architecture of classical music and traditional theatre proscenium stages, which so much of contemporary performing arts continue to be wedded to.

Multi-media installation artists have explored the notion of surround video, creating walls

of projection to encompass a gallery audience. Being surrounded by imagery subverts a privileged ‘front’ orientation and requires a viewer to look around and move in order to experience the whole piece. While these works are novel and often explore new aesthetic ground, they are typically highly tailored to a specific physical setting (i.e. a gallery in a museum) and costly to move and reproduce. Thus, most of these pieces have a short lifespan. This is further aggravated by inherent difficulties in documenting surround video and audio experiences (due to their immersive nature), denying meaningful review and appreciation after the installation is over.

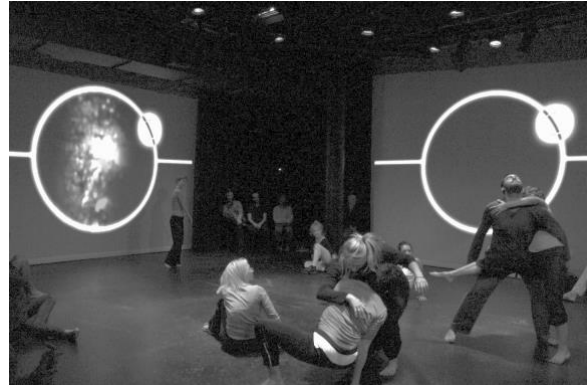


Figure 1, *Hourglass* at New York University

## **Hourglass**

*Hourglass* encourages extended participation in non-verbal and spontaneous communal activity, enhances the experience of musical sound through physical activity, and provides an alternative performance concept for those who lack interest in attending formal recital-style concerts. It was borne of years in observation, from a musician and multimedia collaborator’s point of view, of both modern dance and improvisational community dance forms. Noted was that practices in choreographed dance often require a virtuosity leaving untrained members of the community behind, while entirely improvised structures (where all performative components are variable), offer such little grounding or continuity that sustained and inspired movement ideas or person-to-person connections become extremely difficult beyond the ephemeral moment. Yet, it is also evident that if one embodies musical sound through physical movement, relation to that music is altered and quite likely deepened<sup>2</sup>. It is therefore unfortunate this potential is often

inhibited by lack of supportive and comfortable circumstances for general community members to physically engage music and visuals (at least beyond the brevity of pop song forms for club dancing). In this context of dance improvisation, authors Blom and Chaplin comment on how influential musical sound may be for the uninitiated, noting “music can help find and guide new experiences. ...Wisely selected music can be used to open new doors and push people beyond the familiar and comfortable.”<sup>3</sup>

The sense of audience area vs. stage area also creates a psychological barrier for many people reluctant to be “on display” in an active engagement. Informed by all this, the goal became to create an event structure, both through content and the event “container”, to encourage more expansive possibilities for a meaningful experience in a performing arts event. In other words, to hear music more in depth, and discover on personal terms, how sound and visuals relate to one’s own physicality through movement improvisation. More recently the participatory breadth of the concept has been further extended by developing technical and artistic capacities for attendees to interactively create visual content during the proceedings.

To accomplish the above goals, a large scale and fully composed musical work was created to provide grounding and continuity. Typically, when movement improvisation is presented in participatory community work, the music is fully improvised as well. And while laudable in intent, this absence of a grounded trajectory with at least one medium of expression (such as through a composed musical score) makes it very difficult to be engaged in a sustained and cogent manner beyond perhaps inspired, but very brief moments. The music of *Hourglass* attempts to address this issue of participating in a full hour length structure with its composed music and pacing of musical relationships supporting longer arcs. The music is also based upon observation of what levels in musical complexity tends to encourage a kinesthetic response. This

includes attention to continuities and contrasts in thematic and motivic content, as well as the important effects of musical pulse and temporal parameters more generally.

While the first version of *Hourglass* was for a mixed chamber sextet, the second edition is more streamlined and thus more portable, a composition for live amplified violin, cello, and a four-channel electronic sound playback track all delivered over at least four speakers surrounding the event site. It was also deemed very important to retain at least two live musicians in the event, as this extends a sense of physical relationships between the musical sound and the dance movement.

With the egalitarian nature of the work, distinctions are also blurred between performer and audience through venue configuration lacking suggestion of a stage or a prescribed orientation to the proceedings. The quadraphonic speaker system, immersing the event in sound from all angles, along with multiple video projections, further alleviates awareness of the



Figure 2, *Hourglass* at California Institute of the Arts

venue's physical boundaries. And beyond participation through dance movement, attendees have electronic hand controllers available to produce real time video content upon projection surfaces in integration with fixed video playback content.

A central tenet of the *Hourglass* concept is an event without formalities of a concert venue. The environment should be ordinary, not extraordinary, free of pretense that may discourage communal involvement from a broad spectrum of the public. In this spirit, the event employs highly adaptable logistics and technology with locations prioritizing public participation over observation encouraged, as well as locations allowing reconsideration of where one might experience the performative arts.

It would also be inappropriate to describe those in attendance as an “audience”, with the event fundamentally intended for physical involvement from all. This is in the spirit of Stuart Brown’s comments that “art promotes community integration and interaction. Music, dance, and painting, so often part of harvest festivals and religious observances, bring people together to ‘sing with one voice.’ Art is part of a deep preverbal communication that binds people together. It is literally a communion.”<sup>4</sup> Indeed *Hourglass* has enjoyed the participation of small children, middle aged businessmen, the physicality handicapped, and the elderly. This active participation of a diverse community is at least as consequential to the event’s impact as anything preconceived by the creators and professional performers. And lastly, but very importantly, effort is made to avoid presumptions on exactly *how* attendees might wish to participate, that there is encouragement to be expressive on one’s own terms, and commentary or directives inhibiting extroversion are left aside. In deference to this, a ten to twenty-minute pre-event “movement facilitation” is part of the *Hourglass* practice, acting to build a sense of supportive community and heighten awareness of one’s surroundings.

Since 2010 over forty *Hourglass* events have taken place. The first three served an an interesting and instructive set of contrasting circumstances during this period of the first version of the work (and prior to inclusion of both fixed and interactive video components). In three southern California locations, the Miles Memorial Playhouse of Santa Monica, a large black theater at California Institute of Arts in Valencia, and the expansive dance studio of ARC Pasadena, it was immediately apparent that the continuous long-form musical score, in combination with a pre-event movement facilitation, created an inviting circumstance for active participation. Indeed a frequent post-event comment was in how a participant would normally be too inhibited to engage in movement improvisation. That they surprised themselves in getting out



in the middle of the proceedings and moving, and at how differently they experienced music while in motion amongst those gathered. The smaller, more intimate locations of Miles Memorial Playhouse and ARC Pasadena proved to need more attention in event dynamics for attendees feel comfortable in the surroundings. Whereas at California Institute of Arts, with over 120 young participants, the collective energy in the room was essentially self-sustaining and almost overwhelming.

Events at these and other initial venues consistently raised concerns for how “boxed-in” *Hourglass* could feel given ready awareness of venue walls and approaches to the event space. Therefore in its second year, a three surface multiple video projection commission was completed by Lianne Arnold. This assisted in diminishing a sense of “stage area” or a specific orientation to the event. That by activating multiple vertical surfaces, the boundaries and a sense of participant vs. observer are reduced. Care was taking that the video content did not draw too much attention to itself as to become a primary driver of the event, which might encourage passivity from those in attendance through simply “watching the video”. Instead, the idea was to have video that subtly amplifies and extends the event environment, as well as acting as a possible trigger for dance movement, as is the intent of the music. Ultimately, fixed video projection has proven to be an element of *Hourglass* requiring assessment for use on a per location basis. Its presence can be overbearing and distracting at times, such as at the low ceiling studio of Mascher Space Cooperative in Philadelphia or in the art gallery of Indy Convergence in Indianapolis. Conversely, it has also helped activate a venue and assist in the event’s energy at locations such as the Black Box Theatre of the NYU Theater Department or the ballroom of a Marriott hotel.

The third year brought a realization that many otherwise desirable location circumstances could not support a full sextet of live musicians and amplification (pianist, two mallet percussionists, violinist, cellist, bass clarinetist). This led to a completely new musical score for *Hourglass* calling for just two live musicians (violinist and cellist or bass clarinet) along with four channel electronic sound playback. The determination was that with a minimum two musicians present, a sense of interaction with live music still endures, yet this reduced number of performers gave the event much more logistic flexibility. The addition of four channel electronic sound content (a speaker at each corner of the event space) also assisted in removal of a single perspective or presentation angle to the proceedings. And if a “stage area” is perceived at the location (such as by a raised wooden area or section of floorspace with Marley), the speakers are positioned somewhat beyond those implied boundaries whenever possible to further indicate, however subtly, a singular “however active or passive, everybody’s in this” type of environment.

In 2015, *Hourglass* went further into active engagement with real-time video

feeds, and depending on location, a merger with the apparatus of *Big Tent*. Real-time video feeds became a contribution of processing via the software program Jitter, whereby a highly manipulated feed from a webcam of *Hourglass* participants in “the tent” is projected onto *Big Tent* video surfaces. This provides a rhythmic energy in compliment to the collective physical movements, as if the video surfaces are a hyper-realization and extension of the human participants. Taking one additional step into interactive video in 2016, the intersection with Big



Figure 3, *Hourglass* in *Big Tent* at the Indianapolis Museum of Art

Tent has now extended to use of its handheld electronic controllers for *Hourglass* as well, with participants creating some of the video content on *Hourglass* projection surfaces. In total, the union of concepts first explored with *Hourglass*, with additional technical capabilities of *Big Tent*, has more fully realized the goals for *Hourglass* as an immersive and stimulating environment without distinctions of performer vs. audience or stage vs. off-stage.

## Big Tent

While *Hourglass* looks at questions of shaping both content and event location to encourage active participation, *Big Tent* addresses the issue by creating the venue itself.<sup>5</sup> This is a large-scale portable environment for 360-degree immersive video and audio artistic presentation (fig. 4). Unlike other fully-surround environments of considerable size, *Big Tent* may be easily transported and setup in any space with adequate footprint, allowing artistic content to be brought to non-typical audiences and environments. Construction and implementation of *Big Tent* focused on maximizing portability by minimizing setup and tear down time, crew



Figure 4, *Big Tent* at the Indianapolis Light Festival

requirements, maintenance costs, and transport costs. To date, a wide variety of performance and installation events have occurred exploring the possibilities of *Big Tent* to present contemporary multimedia arts.

Physically, *Big Tent* is a forty-foot diameter ring of eight projection screens, standing twelve feet tall, with a projectable surface 128-feet around (fig. 5). This is augmented with eight channels of surround audio, and eight channels of HD video to fill the surface. The entirety is driven by audio/visual software providing a flexible interface for artists of many creative aims. In the obfuscation of a single

presentation perspective, it shares priorities with *Hourglass* in negation of a perceived audience area vs. stage area, or the single perspective orientation of antiquated proscenium theaters. It is capable of accommodating an audience size of 40 to 60, even with two live performers in the middle of the space. Furthermore, the scale of *Big Tent* allows one to experience the presentation without sense of confinement or lack of a peripheral depth-of-field characteristic common to other immersive multimedia environments. Yet, the sheer portability of *Big Tent* still meets the important goal of taking multi-media immersive presentations out into the community and away from traditional event settings.

As a modern music-technology instrument, *Big Tent* provides a consistent canvas for inter-media artists to explore and work on. Due to its portability, being usable in any space with a sufficient footprint, and ease of

construction requiring two hours for a team of four to set it up, *Big Tent* may be erected as a presentational venue in both traditional and unconventional circumstances (from concert halls and art museums to parks and parking lots).

Other environments have been created with similar technology, but none with the portable cost-efficient aims of *Big Tent*. Scientific virtual reality (VR) systems are one such example, perhaps best exemplified by NASA's HIVE environment<sup>6, 7</sup>, a portable VR display system. Yet, the HIVE focuses on solving different problems, being a single user experience, necessitating a fixed viewer orientation, and being prohibitively expensive to construct. The Allosphere at University of California Santa Barbara<sup>8</sup>, a large-scale facility for advanced research in immersive environments, provides a complete sphere of video and audio several stories tall, existing in a

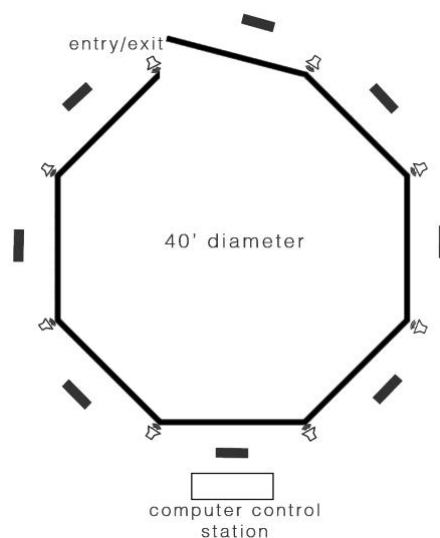


Figure 5, *Big Tent* schematic

dedicated building. However, this space is not at all portable, flexible in application, or available to the broader community.

A design goal for *Big Tent* was to create an aesthetically neutral venue large enough to have shared experience with the community and supporting a broad stylistic range of music, dance, and intermedia art expression. It also accommodates different modes of performance and communication in many different contexts, such as concerts, installations, interactive works, and as employed in conventional facilities (e.g. museums and concert halls) and non-conventional spaces (e.g. parks, gyms, and shopping centers). Original works created and/or adapted for the *Tent* to this point have included multi-hour public concert events, evening length interactive installations, a week-long fixed-media installation, and last but not least, as a container for numerous *Hourglass* events. While frequently existing on their own in presentation, *Big Tent* and *Hourglass* in combination enhances the presentational priorities of both concepts, in effect acting as a meta-demonstration of this philosophical approach to community engagement with multimedia arts.

Upon initial construction in 2015, *Big Tent* began with explorations into technical and presentational aspects of having a live musician in the interior of the space coordinating with

projected imagery. With the audience moving around the space, cabling became an immediate challenge, as performers could not be tethered to audio or power cables along the floor from an exterior control station. And given its portability, *Big Tent* cannot rely upon XLR cable or grounded power floor inserts to service needs within the tent. Wireless solutions were required,

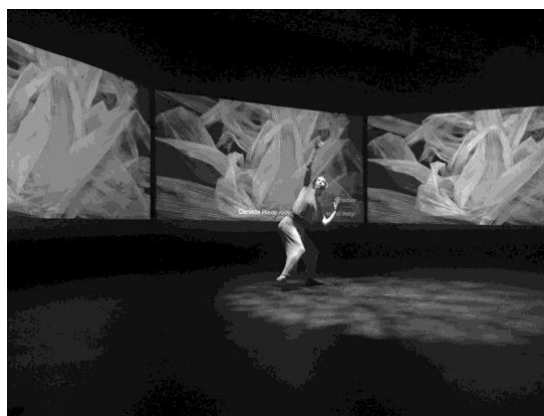


Figure 6, dancer Stephanie Nugent in *Big Tent* at the Indianapolis Museum of Art

yet Bluetooth and Wi-Fi were shown to be too unreliable for transfer of high-quality audio signals. A sophisticated UHF wireless transmission system was adequate to this need however. A power drop from above the tent was also considered but judged too heavy for the length of travel. These power needs must be met via batteries, or if absolutely necessary, cabling protected by walkovers (a disruptive element for the audience, and prohibited if dancers are involved).

Without an overhead truss or canopy system (something hoped for in a future iteration of *Big Tent*) down lighting in the tent was still in need to supplement incidental light coming off projection surfaces. While not requiring a high wattage, this additional light source serves to highlight performers and aid attendees in moving around. Many conventional solutions were unworkable with the 40-foot diameter span, and if lighting was mounted from the frame itself the lighting instruments would inevitably conflict with angles for viewing projected imagery upon the video screens. The rather low cost and easily engineered solution became employing small, battery powered LED lights strung on heavy-gauge fishing wire across the top of the tent, tensioned by the projection surface frames.

With the above technical issues accounted for, *Big Tent* proceeded into its first public events in fall of 2015, three at the Indianapolis Museum of Art, and a fourth completely overtaking the dimensions of a high school cafeteria for a science education fundraising event. At the Indianapolis Museum of Art, *Big Tent* produced day-length public experiences in fixed video, real-time video processing, and interactive video, in coordination with live music or multichannel electronic music. *Hourglass*, having already existed since 2010, also took place twice during these events using the interior as its cloistered space. In fact, the experience of *Hourglass* was certainly intensified given the immersive surround audio and video of *Big Tent*. Participants and facilitators positively noted the visual and aural stimulus coming from every

direction.

A National Science Foundation sponsored dance-for-film by choreographer Cynthia Pratt was created specifically for *Big Tent's* enormous video projection format in 2016.<sup>9</sup> The other major project of the year was a commission of interactive music and video for the Indianapolis Light Festival.<sup>10</sup> This opportunity for outdoor presentation to thousands of people over a summer weekend was particularly notable for use of Wii controllers handed to attendees in which audio and visual content was manipulated in real-time, using the processing power of Jitter software and an Apple MacPro computer. Conversely, this event also reinforced earlier experimentation in discovery of what environmental limits *Big Tent* can tolerate. The first evening of the festival brought a sudden rainstorm, that luckily only impacted the skeletal metal framework (leaving *Big Tent* with minor rust issues but otherwise undamaged). The second evening (fig. 7), while generally of much better weather, tested the capacities of *Big Tent* to sustain wind gusts. Even with ground lines tethering the projection frame, it has become clear that *Big Tent* is capable of handling wind gusts only up to 18 MPH. Despite this specific weather experience, *Big Tent* has on the whole been rather resilient to environmental conditions and durable under stress, with only minor repairs necessary after an initial twelve separate event productions. Surprisingly, given



Figure 7, *Big Tent* at the Indianapolis Light Festival

the sensitivity and quality of the electronics involved, the most common upkeep expense has been replacing iron pipes and fittings that comprise the frame.

While quite versatile on the whole, a future version of *Big Tent* would benefit by a canopy system. With the fundamental design calling for rear projection screens that are highly light

permeable, even very low external light sources wash out projected visuals. This thwarts many possible concepts for use of *Big Tent* outdoors, given that video presentation is not functional until after sunset. Indoor setups are also constrained if windows, security lights, or other light sources cannot be fully dimmed. A canopy would open many more presentation possibilities, in addition to further addressing internal lighting and weather-related conditions, through better elimination of external ambient light upon projection surfaces.

## **Conclusions**

Large-scale immersive environments, with considerations of venue design, artistic content, and pathways for active involvement, can create compelling situations for contemporary artistic exploration, while also remaining in easy reach of the general population. These activated spaces approach the event container itself as an element of the artistic content, with walls as an interactive visual canvas coupled with surround sound audio systems. And unlike most other expensive, inaccessible, and elitist designs, which tend towards restricting audiences and artistic attempts to explore aesthetic possibilities, *Big Tent* and *Hourglass* both provide portable, accessible environments for creators and audiences alike to experience intermedia arts. Through scale and portability, the concepts bring possibilities of 360° surround video, audio, and live performance to nearly any location, for a diversity of active community experiences with the performing arts.

## **Additional Resources**

Photos and video of *Big Tent* and *Hourglass* may be found at the following internet address: <http://www.thebigtent.org/AV/index.html>



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