UNIVERSITY OF LEEDS

This is a repository copy of *'What Country, Friends, Is This?' Using Immersive Theatre Practice to Inform the Design of Audience Experience in Estate 360°*.

White Rose Research Online URL for this paper:
http://eprints.whiterose.ac.uk/138216/

Version: Accepted Version

White Rose
university consortium
Universities of Leeds, Sheffield & York

eprints@whiterose.ac.uk
https://eprints.whiterose.ac.uk/

'What country, friends, is this?'
Using immersive theatre practice to inform the design of audience experience in *Estate 360°*

Scott Palmer[1][0000-0001-9459-6113]

[1] University of Leeds, Leeds, LS2 9JT, UK
`s.d.palmer@leeds.ac.uk`

Abstract.
This paper focuses on issues arising from the making of an experimental interactive 360-degree video that emerged from a relational 'immersive' site-specific theatre project for a public audience that was staged in historic grounds in South Florida, USA in April 2017. This work was undertaken with academics from University of Miami, Kim Grinfeder and Stephen Di Benedetto. The specific nature of the performance event, the filming of aspects of this experience and the post-production processes each raise significant questions relating to the development of methods of 'interactive' digital storytelling for 'immersive' audience experience. The role of theatre practice and performance design in developing these mediated experiences seems to be an important element that has largely been ignored in thinking about how digital immersive experiences might be created.
The video *Estate 360°* was first published on-line in January 2018 and is freely available to download: https://interactive.miami.edu/estate/

Keywords: 360-degree video, immersive theatre, performance, design for audience experience, interactive film, scenography.

1 Context

1.1 Background

This paper outlines the process, key issues and initial findings relating to the audience experience of an interactive 360-degree video based on a site-specific, relational, theatrical performance. Research questions have emerged from the practice: What are the principles and working methods that have arisen from this relatively new practice and how might performance knowledge be valuable in the future development of this medium? How might our experience link to the findings of the only other currently published academic writing that deals explicitly with immersive theatre, storytelling and 360-degree video? This paper therefore represents the first attempt to analyse some of the multiple aspects at play in what was originally framed as an opportunity

for experimentation in translating a relational theatrical performance to the 360-degree interactive video medium.

1.2 Overview

Estate 360° (2018) is an experimental interactive video made in collaboration with students and researchers at University of Miami, Fl. USA. It emerged from a relational site-specific performance '*ESTATE*' staged in a heritage site on Florida's East coast in April 2017. Delivered via the smartphone screen and head-mounted display (HMD), this 'immersive' experience offers a digital simulacrum of the live performance in which the viewer, like the original audience, is asked to navigate the environment as witness to a multitude of characters and their stories. *Estate 360°* seems to raise key questions and new possibilities for exploring performance documentation but more importantly in the context of this paper, for the creation, development and design of audience experience using both theatre practice and 360° filming and VR technologies and techniques.

The original site-specific performance *ESTATE* was created through an extensive, collaborative, devising process that began with professional writers taking part in the Miami-Dade Playwright Development Programme and then developed in rehearsal with students and staff from the University of Miami's Department of Theatre Arts. The premise of the performance is outlined briefly below but it is important to note that an open creative process, beginning on-line six months earlier, allowed for multiple ideas to be tested and refined, re-written and then experimented with further within the rehearsal room before finally being translated to the external site. The importance of play within a devised process has been articulated elsewhere in relation to iterative design processes focused on audience experience in relation to digital content (e.g. Palmer 2006, Palmer and Popat 2007, Bayliss et al, 2009). A similar approach in this rehearsal and devising process was instrumental to the development of performed content and playful interactions continued through elements of improvisation in the final performance. Unfortunately because of time constraints, there was little opportunity for similar playful experimentation between the performers and the technology and technologists in the making of the 360-degree video.

2 *ESTATE - Audience experience as a felt scenography*

The performance title and premise emerged directly from the 444-acre Deering Estate on the shores of Biscayne Bay and played on the multiple definitions of the term 'Estate' that were incorporated both implicitly and explicitly within the performance. The real and imagined histories of this place suggested rich territory for the development of dramatic material situated in a landscape that from pre-history to the present has been inscribed by stories of migration, invasion and occupation but where many of the traces of the past have been deliberately erased.

In considering contemporary notions of expanded scenography, Arnold Aronson draws on de Certeau's notion of space as a practised place and suggests that:

"we may say that human activity, and the sites of human activity, become performance through the application of scenography – the process of transforming a landscape into a meaningful environment that guides performers and spectators alike through a visual and spatial field imbued with meaning" (Aronson, 2017: xv). Although written about contemporary scenography as a whole, these words take on a particular resonance when applied directly to the site-specific performance of *ESTATE* and they neatly articulate both the underlying premise of the performance and the importance of the designed audience experience.

The performance of *ESTATE* was created for an audience in small groups after sunset when the Estate was usually closed to the public. This was a promenade performance with no division between actor space and audience space and centred on an open, multi-layered dramaturgy that offered audiences individual choice about where to go and what to experience. This structure with over-lapping narratives is typical of many theatre works by companies who create 'immersive' performances and allowed the audience considerable autonomy to negotiate the various one-to-one encounters with performers, often in close proximity. This deliberate use of proxemics to establish relationships between participants, actors and the spaces of the two houses was a key scenographic strategy that defined the nature of the performance and became central in the decision to explore how 360-degree video might work with this same subject matter.

The role of the environment and design of the audience experience is at the heart of post-dramatic performance work such as *ESTATE* where the combination of site and written text combined to create new meanings. Aronson argues that:
"Scenography makes the underlying structures of representation visible, presenting the spectator with multiple (and sometimes contradictory) understandings that expand a literal text. Meaning is replaced by relationship. This is most apparent in site-specific works in which scenography is not a newly created aesthetic product but a transformation of existing space and structures. Site-specific scenography foregrounds the spectators' interaction with the surrounding environment and their increased awareness of the emblematic signs inherent within the space." (Aronson 2017, xvi)
Rather than viewed at a distance, *ESTATE* was centred on a scenography that was designed to be felt and experienced. It both responded to and incorporated the qualities of the site. The audience were situated within the work; some of them experiencing a well-known space anew – transformed by the darkness and the aesthetic experience on offer; others were overwhelmed by the novelty of the theatrical experience that began with a series of vignettes in which the audience were first guided around the outside lawns, coastline and pathways and then left to their own devices to explore the internal rooms and spaces of the two houses. Crucially the design of this experience allowed for a gradual immersion within a theatrical world of multiple narratives in which the audience members were framed as co-creators. This framing is markedly different to the experience of sudden immersion experienced when using the HMD.

Adam Alston has suggested that models of immersive theatre experience such as those of Shunt or Punchdrunk might be thought of as 'experience machines' (2016) In using this term there is a clear analogy to the experience of computer gaming where the participant is invited to enter a designed environment usually with a

specific goal in mind. In recent theatre practice, this 'goal' is usually framed around encounters in which the audience are asked to make sense of fragmentary aesthetic experiences. The particular qualities of *ESTATE* therefore, in part a guided tour and part a series of intimate encounters, seemed to provide an ideal opportunity to experiment in order to discover how a performance that was predicated on felt scenography and intimate one-to-one encounters might translate to a new experience using the technology of the HMD and interactive 360-degree video.

3 Adapting Immersive Performance to 360-degree video

Although filmed in daylight, the *Estate 360°* video captures some of the qualities of the original night-time performance and offers a distinctly different audience experience that is now delivered via the smartphone screen and HMD. Unlike 360-degree films available on platforms such as YouTube, *Estate 360°* combines elements of game navigation via the Wonda VR app that allows some limited interaction. It provides a degree of control and autonomy within the world through the use of arrows that appear on screen as virtual buttons superimposed on the filmed environment. This interactivity allows the experiencer to choose to leave scenes that may not sustain interest and to explore choices of different pathways within the film – which is directly analogous to the live theatrical experience that was offered in *ESTATE*. This type of navigational experience has been compared to that of first-person computer games such as *Myst* (1993) where the player is left to explore the world to piece together a series of clues and has the freedom to move between linked areas. Other writing has drawn parallels between computer gaming and 'immersive' theatre practice (e.g. Klich 2015, Biggin 2016) but this paper specifically focuses on the nature of the experience offered through the format of the interactive 360-degree video.

3.1 Spatial Relationships in 360-degree video

Research relating theatre and performance practices to the development of 360-video techniques appears to date to be very limited. In a key recent study by Pope, Dawes et al (2017) there is both a recognition of the absence of studies in this field (p. 4476) and also a clear acknowledgement of both the value of 'immersive' performance practices and the central role of space in making meaning: "Theatre practitioners' expertise in manipulating spatial interactions has much to contribute to immersive recorded content." (p. 4468). This scientific study analyses the use of proximity/affect in 360 films using theatre directors and actors within a studio setting and specially commissioned script. The research team made the analogy between the VR/HMD experience and live performance: "Like VR, theatre is a fixed point 360° experience in which the audience is free to look anywhere, so expertise in theatre can inform VR cinematography." (p. 4468)

While this study might have generated important empirical data relating to the impact of proxemic relationships, there is little in their conclusions that might surprise a theatre practitioner familiar with the complexity of rehearsal and devising processes in making relational work for live audiences: "The complex ways in which

theatre directors approach space, as a technical challenge and semantically loaded space, have much to contribute to the emerging art form of immersive recorded media." (sic) (p. 4477). While the value of performance practitioners in the development of interactive and immersive digital content may not yet be widely acknowledged or their potential fully recognised, in placing this expertise firmly in the hands of the theatre director, the research team appear to have taken a rather over-simplistic view of immersive theatre practices which are rarely predicated on the hierarchical models and single auteur of traditional or commercial theatre.

The focus in their study on old-fashioned notions of 'blocking' in terms of fixing the actor's positions in space "one of the most important parts of conveying the identity and relationships of characters *on stage*." (p. 4470 my italics) while assisting in explaining the importance of proxemic relationships to the ways in which theatrical scenes make meaning, also suggests a theatrical model where the human body is decoded from afar. Discussions of stage left and right are unhelpful in the immersive theatre context where there is no separation between performer and audience and the actors are not 'on stage' in the same sense. Actors are not being viewed remotely or from a single dominant direction, but rather being engaged from multiple directions simultaneously by audience members who are inhabiting the same environment. This shift of audience member from viewer to experiencer in 'immersive theatre' allows for more subtle and intimate exchanges to take place and crucially foregrounds the importance of the phenomenal, embodied experience of the audience member precisely because of their live, proxemic relationship to the actor(s). However the subtleties of the invitation, so critical to the success of participatory work of this kind, and articulated clearly by performance scholars such as White (2013), are also absent from this study.

It is the vividness of the embodied experience of the participant that lies at the heart of the immersive 'experience machine' and relates directly to the notion of the 'unique power' of these theatrical encounters (Machon 2013). Consequently when this relationship is translated from actor/audience to actor/360-degree camera, new creative options arise for those engaged in designing audience experiences for digital content. However, it is important to note that the proxemic relationship in the filmed world is always mediated through the lens and cannot retain exactly the same power or impact as the close proximity of another human body in the live theatre encounter. Current technology does not allow us a full haptic experience, senses of taste and smell are absent while of course there is also no possibility of interaction or direct address. There is however room for the creative use of proxemic relationships as Pope et al. suggest: "For the first time, 360-degree filming and VR make it possible to harness the power of spatial relationships and configurations for recorded media. Rather than manipulating space in a fixed frame, such as close-ups and wide shots, actors can manipulate spatial relationships between one another in a way that is familiar in theatre and in everyday life." (p. 4470)

3.2   Experimenting with camera positions in 360-degree video

In *Estate 360°* we experimented not only with manipulating relationships between actors, but in scenes that emerged from our live performance and designed as one-to-one encounters, we specifically experimented with a number of different proxemic relationships between performers and the camera. This seems to be the key to a new 'power of spatial relationships' in 360-degree filming.

In one scene ('Bride Dancing') a young woman in a wedding dress dances around the camera, placing the viewer at the very centre of the scene. Although she doesn't speak, the experience we are offered appears to mirror the giddiness and turmoil of her personal situation – which has been suggested in previous encounters with her. In this scene in the ballroom, the experiencer using the HMD needs to continually turn if they wish to keep the bride in sight – but may choose to stay facing in one direction and allow her to continually enter, move through and disappear from their field of vision. In this way the spatial design of the scene allows the experiencer a degree of autonomy – some of which might alter the overall impact and intention of the original scene. This degree of choice – of where to look and where to move (using the virtual buttons) is in marked contrast to the conventional theatre experience where the audience might be bounded by their seats and distance from the stage. The 360-degree experience offers autonomy for the experiencer to design their own personal version of the performance knowing that when the performers address the camera (either directly or indirectly) they are still cast as central to the overall performance.

In another interior scene in *Estate 360°* set in the anthropologist's study-bedroom, we asked the performer to replicate the intensity of his one-to-one interaction with audience members in *ESTATE* by performing part of his scene very close to the camera. Despite the distortion caused by his extreme proximity to the lens, this sudden shift creates a startling and slightly sinister effect when experienced in the HMD which equates to the feelings of claustrophobia that were achieved in the original live performance. For a scene in the kitchen we chose to lower the height of the tripod so that the scene was experienced close to the floor, at the same level as the child who was taking refuge under a sink. Similarly in an earlier scene set beside the sea, the height of the camera was altered to match the eye-level of an audience member who would be sat in an adjacent chair. This scene works particularly well when wearing the HMD if the experiencer is also sat down.

3.3   Post-production dramaturgy

In making one-to-one work of this nature, the designed spatial relationships are not created by one person (the director) alone, but rather through a series of complex interactions between bodies, objects and the space itself in which the expertise of the actor and the scenographer are also paramount. In translating this experience to 360-degree video the nature of the experience is also predicated on a series of technical and production decisions including; the selection and editing of the video, the stitching of the shots to create the illusion of 360-degree view, the application of sound editing skills and the insertion of interactive buttons. What is fundamental in this post-production process is also the key decisions taken about what scenes might be

included and in which order. The number of scenes and their locations made this element a complex task. Some scenes were cut as they didn't translate well to 360-video or had sound recording issues that interfered with the sense of immersion within the world of the drama. Potential pathways were tested with the aim of allowing an almost total freedom of movement between scenes, and to wander through the landscape, but the strange geography of the houses and the use of rooms on different floors of the buildings meant that the 360-degree experience was ultimately confusing. Guided by the expertise of Kim Grinfeder, a balance needed to be struck between the choices offered to the participant and a reasonably logical pathway through the fragments of scenes that might offer a satisfying rather than ultimately frustrating experience. The particular time constraints of the original filming also resulted in a number of issues that came to prominence in the post-production period. With the advantage of hindsight, the creative team wished that instead of using an extant theatrical performance, that we could make a work using similar techniques specifically for 360-degree interactive video.

4 Making space speak – Interim Conclusions

The nature and power of the space as experienced in 360-degree video is a key element that is deliberately neutralised in Pope et al's study. Conducting their experiments within a black-box laboratory environment enabled the focus to be specifically on the nature of the proxemic relationships between actors and how this might convey meaning in HMD 360-degree and VR worlds. What is denied in this scenario however is the power of the space itself to make meaning. Tim Ingold drawing on Bollnow asserts that "Every space has its own atmospheric character that impinges on us and takes hold of our feelings" (2012:79). This is particularly evident in immersive theatre practice, whether created in designed space within black-box theatre environments or in site-responsive or site-specific practice.

In *Estate 360°* the location was always going to be a key component of the experience – especially as the dramatic material had originated from a deep engagement with the site. In the filmed content, just as in the live performance, the materiality of the real world both demands attention and contributes to the meaning and resonance of each scene. The environment is the first thing that participants are aware of as they put on the HMD and are transported to this sub-tropical landscape. This can at first be disorienting. One respondent remarked:
"At the theatre there is some kind of performative airlock that holds you as an audience member in between states, (overture, announcement about phones…) closing one door behind you before opening the way to the unknown. In this 3D situation I am catapulted into the scene. I am reminded of Viola's words that open *Twelfth Night* [I, ii] –'What country, friends, is this?' as she drags herself ashore on the island."[15].
Questions relating to notions of immersion and presence pervade analyses of digital media experiences as Biggin outlines below, and this is useful to consider in relation to this participant response. The analogy with the disorientation of Shakespeare's heroine arriving in a strange land and of feeling 'catapulted into the scene' suggests

more than simply presence: "*Presence* is relatively easy to achieve in VR/immersive theatre: the player/spectator is surrounded by the environment as soon as the technology is enabled/they enter the space. Immersive *experience* is harder to achieve, and trickier to define. A feeling of "being there" of "feeling/reacting as if you are there," is characteristic of being highly immersed in a computer game: as the player is physically distant from the screen such responses indicate high levels of engagement" (Biggin, 2017: 22-3 italics in original).

At about halfway through the *Estate 360°* journey, the experiencer finds themselves on a verandah amidst 13 empty rocking chairs which are all moving in ghostly fashion. Slowly they come to a stop. The scene, reminiscent of a computer game environment such as *Myst*, without human performer or spoken word seems to be the single most affective moment in the 360-video and one that of course could not have been achieved in the live performance. This points towards the potential to explore further scenographic moments using the combination of theatrical and filmic techniques – in a further scene the two techniques come together in post-production where a performer is made to vanish into thin air as she speaks the word "disappear". These scenes foreground the necessity in the 360-degree experience of allowing time for the participant just to enjoy being immersed in each space thereby allowing both the space and the objects within the spaces to make meaning.

The importance of the scenographic elements; the actors, their costumes and the material objects within the world, the sound and the quality of light cannot be underestimated in their significant and inter-linked contribution to the audience experience of the digital world. While we cannot (yet) get close to the feelings of proximity and the full-bodied sensory experience of actually being on that site, in that space and with that actor, the advent of the 360-degree camera enables a fuller complete visual experience that is analogous to being in the real world. In prioritising the visual it encourages participants to look in perhaps a more active way than they might when stood in the actual spaces of performance. Joslin McKinney's analysis about how we see scenography in the theatre can also be helpfully applied to the experience of the 360-degree video: "Looking in the theatre is not a purely visual experience. To look at scenography is to apprehend not only illustrations or depictions, but to notice the composition and orchestration of materials and feel the way they work on us at a bodily level. This is a way of knowing and a kind of action because it connects us to our own experience of the world, our memories and imaginations and our experiential understandings of daily life." (2018, p.115)

Might the 360-degree video experience ask us to not only look but also to feel in a more active way in that is not only a primarily visual one? Might this offer an experience where the digital world might be touched through the eyes? Laura Marks's formulation of haptic visuality (2000, 2002) perhaps offer one such approach in relation to understanding the potential experience of new digital media – since it offers a way of knowing that calls into play multiple senses but does not depend on the literal presence of those senses. Touching with the eyes opens the possibilities for new ways of understanding this medium and future dramatic possibilities in relation to multiple senses, affect and embodiment.

In practical terms, it is not therefore only the proxemic relationships that might be established between performer and audience, (in the live performance) or between actor and camera (in the 360-degree film experience) that are critical in making work of this nature, but rather the way in which the whole environment is organised to be experienced. This requires a design process in which the scenographer needs to play a central role –and a process that is more akin to the iterative stages of design for user experience rather than more traditional methods of design for the theatre stage. Moving well beyond the creation of decorative backdrops in the theatre, this expanded role of scenography places the experience of the audience at its heart and should recognise the haptic potential of the new digital worlds experienced through the HMD and 360-degree and VR technologies.

References

1. ESTATE – site-specific, relational performance (19-22 April 2017) http://www.deeringestate.org/estate-site-specific-plays/ last accessed 20/9/2018
2. Estate 360° interactive video (2018) Homepage, https://interactive.miami.edu/estate/, last accessed 20/9/2018
3. Palmer S. A Place to Play - Experimentation and Interactions Between Technology and Performance. In: Oddey A; White C (eds.) The Potentials of Spaces: the theory and practice of scenography and performance, Intellect: Bristol, pp. 105-118. (2006)
4. Palmer S, Popat S. Dancing in the Streets: The sensuous manifold as a concept for designing experience. In: International Journal of Performance Art and Digital Media. 2.3: 297-314. (2007) doi: 10.1386/padm.2.3.297_1, URL: http://eprints.whiterose.ac.uk/76894/ last accessed 20/9/2018
5. Bayliss A, Palmer S, Hales D, Sheridan JG. (Re)searching through play: play as a framework and methodology for collaborative design processes. In: International Journal of Arts and Technology. 2.1-2:521 (2009) doi: 10.1504/IJART.2009.024054, URL: http://eprints.whiterose.ac.uk/79204/, last accessed 20/9/2018
6. Aronson, A. Foreword. In: McKinney & Palmer (eds) Scenography Expanded: an introduction to Contemporary Performance Design, London, Bloomsbury Methuen, pp. xiii-xvi (2017).
7. Alston, A. Beyond Immersive Theatre: Aesthetics, Politics and Productive Participation. Palgrave Macmillan, London (2016).
8. *Myst.* (designed by Miller, R & Miller, R), Brøderbund. (1993)
9. Klich, R. E. Playing a Punchdrunk Game: Immersive Theatre and Videogames. In: Frieze, James, ed. Framing Immersive Theatre: The Politics and Pragmatics of Participatory Performance. Palgrave Macmillan, Basingstoke, pp. 221-228. (2015).
10. Biggin, R. Immersive Theatre and Audience Experience: Space, Game and Story in the Work of Punchdrunk, Palgrave Macmillan, London (2017).
11. Pope, V., Dawes, R., Schweiger, F., and Sheikh, A. The Geometry of Storytelling: Theatrical Use of Space for 360-degree Videos and Virtual Reality. In: Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems Denver, Colorado, USA. May 06 - 11, 2017, pp. 4468-4478, ACM, New York, NY, USA. (2017)
12. Machon, J. Immersive Theatres: Intimacy and Immediacy in Contemporary Performance, Palgrave Macmillan, Basingstoke, (2013).

10

13. White, G. 2013. Audience Participation in Theatre: Aesthetics of the Invitation, Palgrave Macmillan, Basingstoke, (2013).
14. Ingold, T. The Atmosphere. In: Chiasmi International, Volume 14, 2012, pp 75-87. DOI: 10.5840/chiasmi20121410 (2012).
15. Andrews, A. Private e-mail correspondence with author 3/7/2018
16. McKinney, J. Seeing Scenography: scopic regimes and the body of the spectator. In Aronson, A. (ed.) The Routledge Companion to Scenography, Routledge, London, pp. 102-118. (2018).
17. Marks, L U. The Skin of Film: Intercultural Cinema, Embodiment, and the Senses. Duke University Press, Durham, (2000).
18. Marks, L U. Touch: Sensuous Theory and Multisensory Media. University of Minnesota Press, Minneapolis, (2002).