

Beyond the Garden of Adrian and the Authentic Actor-Audience Connection

Introduction

This article examines the effectiveness of the actor-audience relationship in virtual reality (VR) through a practice-based approach using the recent immersive VR performance *Beyond the Garden of Adrian*, which premiered as a part of the Spectacles Vivant, Scènes Numériques showcase at the Festival d'Avignon in July of 2025. *Beyond the Garden of Adrian* was a virtual recreation of Adrian Howells's 2009 piece *The Garden of Adrian*, which he created while in residency at the University of Glasgow. The original piece featured a striking scenic design by Minty Donald, who transformed the University's theatre space into a garden with a wandering boardwalk. Donald and Howells also opted to remove the theatrical "trappings" that turned the space from what it was - a chapel - into a performance venue. The result was a one-to-one interactive performance with distinctly religious overtones. This piece was selected specifically because Howells extensively documented his audience's reactions to the original live performance and thus we sought to compare the reactions of our audience. By comparing these two sets of data, we wanted to gain an understanding of how the actor-audience relationship translated into virtual reality. Huiyan Sun points out that this relationship is a "significant part of theatre" and describes it as a direct transference of emotions between actors and audience members (Sun, 2023, 70). Empathy, defined as "the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another,"¹ seems an apt term to describe this same transference. While the concept of VR as an "empathy machine" has been frequently discussed, what we are interested in is whether the level of empathic exchange that constitutes the actor-audience relationship in theatre can exist when that theatre is a virtual space.

The actor-audience relationship has a basis in both the work and writings of Konstantin Stanislavski and in neurobiology. This relationship suggests that the purpose of the embodied emotional inner life of an actor during a performance serves not just to create that performance, but also activate the embodied emotions of the audience members who are watching. In his work, Stanislavski believed the actor was creating an experience "for and with the audience." (Evangelatou, 2020) The basis in neurobiology is found in mirror neurons, which form the mechanism that creates a sense of empathy. Mirror neurons in an actor-audience relationship create within the audience member the sense that they are experiencing the same emotions as the actor. Performances in which the fourth wall exists are generally thought to have a passive audience, which is usually contrasted with immersive performance's active spectator. However, if engagement and reciprocation of emotions is present between the actor and audience

¹ From <https://www.merriam-webster.com/dictionary/empathy>

member, the audience member is “engaged in a dynamic (rather than passive) process,” even if they are not walking through an immersive environment. The relationship is thus “bidirectional,” according to Aphrodite Evangelatou (2020). This transforms the audience member of any theatre piece into an active participant, regardless of the degree to which the performance is immersive. The production design also plays an important role in Stanislavski’s understanding of the actor-audience connection; a well-designed environment serves to stimulate the actor’s emotions as well as the audience’s. Chekov described how an actor’s movement can also stimulate this emotional response (Evangelatou, 2020). In writing about the existence of the actor-audience relationship in environmental theatre, with the audience physically activated and participating in a performance of *Romeo and Juliet and Sea*, performed in China in 2021 as part of the Aranya Theatre Festival, Huiyan Sun describes how audience members become actors through participation in the play and relationship with the actors. Sun explains how environmental and immersive theatre “invites” the participation of audience members, which requires initiative on the audience’s part. Without this initiative, they cannot transform into actors and the actor-audience relationship is weakened (Sun, 2023). To experience the actor-audience connection is to actively and empathically participate in a performance, regardless of its form.

The 2020 COVID pandemic saw an influx of digital and virtual reality (VR) performance while live performance venues shuttered around the world. Several notable pieces include The Ferryman Collective’s *Welcome to Respite* and *Gumball Dreams*; the VR game *The Under Presents* which employed live actors to interact with players in a social setting, and also produced *The Tempest* in-game in an interactive format; and Double Eye Studio’s *Finding Pandora X*. All of these performances involved virtual actors and audiences sharing virtual space similar to how we share space in immersive theatre. In traditional theatre, the actor-audience relationship is in part dependent on the existence of the “fourth wall,” that invisible barrier separating the two parties. This simultaneously creates two “realities” - the “real world” where the audience exists and the “art world” which the audience observes (Xu, 2021, 176). In immersive and virtual reality theatre, this distance between the actor and audience is lessened so that instead of simply observing the “art world,” the audience member is experiencing it. The relationship between the audience and actor is not just one of observation but rather of communion.

While many artists were celebrating what they felt was the birth of a new form of theatre, it also had its detractors. On what was called “zoom theatre,” Rebecca Willingham noted that the sense of presence and community was lacking: “So [if] we can’t have all of us in the same room, how do we transfer that feeling? ...How do we still create community during this time?” (Considine, 2021) Willingham’s question speaks to the concept of “presence” in theatre as well as “liveness” - if we are willing to expand the definitions of these terms to encompass virtual “rooms” as well as physical ones then the actor in a VR performance could be considered to be both present and live. In the pieces mentioned above as well as with *Beyond the Garden of Adrian*, nothing was pre-recorded, the performances occurred in real-time with actors sharing virtual space. Presence goes beyond the concept of physical location when discussed in theatre - an actor or an audience member is “present” when one party senses a “reciprocal apprehension” from the other (Samur, 2016, 245). The question is then whether such a

relationship can exist without the physical co-location of actor and audience member; whether the mirror-neurons can fire in a virtual environment.

The goal of *Beyond the Garden of Adrian* is to examine the actor-audience relationship in virtual performance. The project is based on Adrian Howells's 2009 work *The Garden of Adrian*. Adrian Howells was a performance artist who primarily worked in the United Kingdom in the 2000s and 2010s. He pioneered the “one-to-one performance” form, which was in many ways a precursor to the immersive and interactive works we see today: it became a part of Punchdrunk’s *Sleep No More* and is an interaction in immersive theatre that is prized above all others (Alston, 2019, 30). Essentially, in a Howells performance, all participants get the “prized” interaction. Howells’s performances often had set designs with elements that were specifically chosen for their “affective appeal”(Heddon et al, 2016, 10) His work with his audience-participants was concerned with acts of care or service, intimacy, and generosity. These were encounters that allowed an audience member to be vulnerable.

We chose *The Garden of Adrian* because it presented the opportunity to recreate a full scenic design in virtual reality, one that effectively supported the performance and interactions between Howells and his audience-participant. It also centered the relationship between the actor and one audience member at a time but did so with a low barrier of entry for the audience member. There were no lines to learn and little was asked of the audience member beyond being receptive and reflective. The experience centered on a “silent relationship” between actor and audience member and contained within it a clear framework of consent and opportunity to opt out of individual parts of the performance. The effectiveness of the actor-audience relationship would be measured via surveys conducted at the end of each performance. These surveys asked each audience member to rate their “connection” with “Adrian” on a scale of 1-10, both for the overall experience as well as for each individual station. The surveys also solicited comments through open-ended questions asking about how the audience members felt during these interactions and whether the interactions brought up any memories or emotions related to past events in their lives.

Howells did this himself in creating the original 2009 work. In his archives at the University of Glasgow, the responses to the piece are well-documented. Each audience-participant left their responses to questions about what they remember and felt after exiting the piece. We can thus compare what we received from *our* audience-participants through exit surveys and determine whether the reaction gained from the virtual piece is in line with the documented reaction from the original. With this project, we hoped to determine three things:

1. What performance methods enable an intimate, emotional audience experience to occur during a virtual reality performance?
2. Are there ways to create an empathic connection with another human being in a digitally mediated space?
3. What tools can be used to improve future digital and virtual performances so that the audience experience will be as close as possible to a live performance?

Background

The use of virtual reality in performance extends back far earlier than the 2020 COVID pandemic. Theatre artists working in and writing about virtual reality have acknowledged that even traditional proscenium theatre involves a degree of virtual or mixed reality due to the fact that theatre involves the creation of “imaginary worlds” that go beyond “everyday life.” (Baía Reis and Ashmore, 2022, 7) While we have mentioned several immersive virtual theatre created during the pandemic, one can find examples of VR performance extending back into the 1990s. One factor uniting these pieces is that they all center the experience and agency of the audience. Brendan Bradley, the creator of *Non-Player Character the Musical* deliberately centers the audience by using them as the vehicle to guide the story: the “non-player character” of the title is the unlikely hero of the story, and it’s the audience who helps him step into that role fully. Bradley noted that the show is an “act of co-creation” on the part of both himself and the audience members, and with different styles of play no two shows are ever the same (Braun and Kathöfer, 2024, 185). In many shows the audience could inhabit the body of a character either directly involved with or peripheral to the story. With the Royal Shakespeare Company’s *DREAM*, audience members became fireflies and would fly through the landscape of *A Midsummer Night’s Dream* in order to follow the story and also to provide the lighting for the characters in the play (Baía Reis and Ashmore, 2022, 16). This activation of the audience member is also found within the games available in virtual reality, and can be seen as a central concern behind any artistic creation within the medium (Pike, 2020, 122).

This audience activation is also at the heart of immersive theatre and the one-to-one performances that Adrian Howells was known for creating. Josephine Machon in her book *Immersive Theatres* compared the type of immersion and activation found in live immersive theatre and the digital immersion in performances that used technology. Machon argued that technology could aid in the creation of intimacy when used in immersive theatre by heightening the embodied experience through the use of interfaces, head-mounted displays, surround sound, or haptics (Machon, 2013, 36). It was this connection that prompted Harry Robert Wilson to consider the possibility of using virtual reality to create intimate encounters within performance, particularly within the context of one-to-one performances like that of Adrian Howells (Wilson, 2020, 117). Wilson compared the immersion within a re-creation of nature in Marshmallow Laser Feast’s *We Live in an Ocean of Air*, in which audience members donned backpacks with PCs and wore virtual reality headsets to wander through a forest of sequoias, to that of Howells in *The Garden of Adrian*, finding that both pieces attempted to create intimate, nature-based experiences in “virtual” settings (with *Garden* the “virtual” referred to the fact that the garden itself was not natural but created inside the theatre by Minty Donald and other designers), and also noted that while one was a fully embodied experience, the dis-embodying that virtual reality offers created enough of a sense of strangeness that audience members in fact experienced that world in a new way. These are two avenues by which audiences can be actively engaged in their own experience of a performance.

Empathy within virtual reality has also been a source of exploration for scholars. Irom noted that VR can create an “affordable empathy” within its audience - an empathy that comes without risk,

and questions how VR might be used to push that empathy into one in which risk is assumed due to examination of relationships and self-disclosure (Irom, 2018, 4274). In several studies measuring empathy and prejudice felt towards stigmatized groups, Christofi and Despina found preliminary support for the theory that VR can be used to effectively induce empathy in its users (Christofi and Despina, 2017). In an article discussing both stage presence and the concept of “presence” within VR, Sebastian Samur noted that stage presence involved a “social aspect” whereby an audience could “sense” an actor through sensory input beyond simply seeing and hearing them (245). This concept of presence is in alignment with the “actor-audience relationship” that we explored in *Beyond the Garden of Adrian*. Samur went on to say that in order for an audience to experience this same level of presence in VR, they “must become psychologically engaged with the performer or the computer-generated content.” (246)

Methodology

Experiment Overview

It is necessary to point out that *Beyond the Garden of Adrian* is an experiment in performance. Acknowledging that a performance experiment is not the same as a scientific experiment, we nevertheless wanted to collect data that could be used to determine the extent to which the actor-audience connection was felt by our audience. To achieve this, two versions of *Beyond the Garden of Adrian* were initially created: version 0, the control, was as faithful a recreation of Howells’s original piece as could be achieved in VR, with every element transposed from a physical reality to the virtual with no added VR “affordance” (any effect that did not exist in the original but could only be achieved in a virtual environment); and version 1, in which we modified several elements of the performance to make use of those affordances. The slight changes in version 1 were intended to facilitate a closer relationship between the actor playing Howells (theatre student Nicky Chier) and the volunteer audience-participant. We used Maya to design the outer shell of the building, and 3DS Max plus VR Chat Creator Companion to create the interior environment. The performances were workshopped and presented using Meta Quest 2 headsets on the part of our team, and the Quest 3 for audience-participants in Avignon (audience-participants for the test performances used their own headsets). Eventually, after both versions 0 and 1 were staged for test audiences, a version 2 was created for presentation at the Festival d’Avignon. Each version updated the previous one based on audience feedback.

Data was collected from all audience members through the use of surveys sent out after each performance. Versions 0 and 1 were made up of the same audience members, and so each attended version 0 and responded to the survey before attending version 1. All data was thus self-reported and consisted of rating the audience member’s connection to Adrian on a scale of 1-10, once overall and once for each individual station within the piece, and also submitting any personal comments, reflections, emotions, or memories that the audience member felt relevant.



Figure 1: The view from the cabin at the start of *Beyond the Garden of Adrian*

The five stations (in both Howells's original piece and in all versions of our VR recreation) were as follows:

1. The Flower Station: The audience-participant was invited to look closely at a flower for several minutes.
2. The Strawberry Station: They were invited to eat strawberries out of Adrian's hand.
3. Sitting on a Rock: They sat on a rock and were invited to take Adrian's head in their lap, and sit there in silence for several minutes.
4. Hand Washing: They were invited to have their hands washed by Adrian in a small pool of water.
5. Spooning in the Grass: They were invited to lie down on a blanket surrounded by grass, and spoon with Adrian.

12 volunteers were solicited from a combination of outreach to friends and acquaintances who we knew were familiar with virtual reality and from a VR discord community. Thus, all volunteers for versions 0 and 1 were, to some extent, knowledgeable about how to navigate in the virtual space. For version 2, which was presented in Avignon and consisted of attendees at the Spectacles Vivant/Scènes Numérique meeting at the festival, the experience on the part of volunteers with virtual reality was varied, with many having never experienced virtual reality at all. The Avignon audience was made up largely of French speakers whose knowledge of English ranged from very little to completely fluent. We presented the piece in English, but the survey was translated into French to allow audience members to respond in the language they felt most comfortable.

Spectator-Participation-as-Research – critical methodology (SPaR)

Spectator-Participation-as-Research is a practice-based research methodology and the critical framework through which we ran our experiment. In SPaR, first-person accounts are used in addition to scholarly research and writing to analyze an audience member's experience of a performance. A methodology that is growing in popularity due its particular use in writing about immersive theatre, SPaR accounts for the multiple roles played by those involved: participants, spectators to the work and to their own participation, and analytical research on the part of the scholar. (Aragay and Monforte, 2016, 7).

Heddon and Johnson note the experimental nature of Howells' interactive performances – “experimental” in the sense that the performances themselves were experiments. As they note, becoming an audience-participant in one of Howells’ works was to “be inducted into an experiment regarding the nature of the encounter.”(Heddon and Johnson, 2016) This reflects the view that interactive and immersive works of performance are essentially social experiments. Bourriaud wrote that the trend towards these works of art in the late 1990s was a “rich loam for social experiments.” (Bourriaud, 2002, 9) These works simulate a situation in which a framework of expectations is established by the artist and dialogue is loosely scripted, and the work itself responds to how an audience-participant engages with it.

Version 0

Using a video of the original performance obtained from the Live Art Development Agency in London, we were able to assemble a “script” of the original. In the summer of 2023, we workshopped this script in a partially constructed version of the space with professional actors in order to figure out how to “be” in VR. This workshop was effective in demonstrating two main ways that an actor in virtual reality could connect with an audience-participant. The first was in the choice of avatar. The website Ready Player Me² offers customizable human-looking avatars for VR Chat in a limited selection of body shapes and clothing. We chose to use Ready Player Me avatars because they roughly made eye contact with other people in VR Chat, and their lips moved when the user spoke. These simple characteristics helped give the sense that one was actually conversing with another person. During the workshop, we used avatars that looked like ourselves, but during the performance we created an “Adrian” avatar for the actor playing Adrian to use. Due to the aforementioned limitations, our Adrian did not look like the real-life Adrian Howells. The avatar appeared considerably younger and thinner than Howells had been in his lifetime, wearing a white t-shirt and pants. During the test performances, we allowed our audience members to come into the space in any avatar they chose. We hoped that this would help them feel comfortable and relaxed. In Avignon, we created one audience-participant avatar in advance to facilitate transitions between each attendee.

The second finding from the workshop was in body language. Hand gestures, arm movements, standing, and walking had to be relearned as the movements were not always indicative of how

² See <https://readyplayer.me/>

one was actually using their body. When standing still, if the arms were not held at a slight distance from the body, they occasionally moved *through* the body itself, embedding in the torso. The use of gestures, either by naturally performing the gestures or using pre-animated ones selected from a menu in VR Chat, created a sense of a real person actually *be-ing* in their virtual body. A simple arm movement made by Adrian while speaking the line, “welcome to the Garden of Adrian” conveyed both presence of a live actor and a sense of connection and ownership to the virtual space. Controlled walking also helped, since to simply move forward in VR was like speed-gliding over the terrain, not being confined to stairs, paths, or gravity.

In version 0 of the performance, the audience-participant would log on to VR Chat and join the virtual performance “world.” They found themselves inside a cabin with a lawn chair. Adrian stood at the bottom of the stairs that exited the cabin and called the audience-participant by their real name, asking them to come down the stairs. He offered them a hug, and discussed the rules of consent. We took the text of this speech directly from the LADA video of the original performance:

“Now, I just want to say a couple things to you before we start. And that is, if you’re uncomfortable with anything that I’m asking you to do or think I’m asking you to do, just say, OK? And also you have total agency in this space, OK? So if you want to change something or terminate something, we can do that. And also I’m much more interested in using this piece to explore a silent relationship, OK? So if I ask you a question don’t feel you’ve got to vocalize an answer, just answer internally. Are you comfortable with that?”
(Howells, Live Art Development Agency, 2009)

After confirming that the audience-participant understood, Adrian led them to the first station, and they sat down on the wooden boardwalk. In front of them was a flower, and Adrian asked them to simply observe the flower with him for several minutes. At first, they observed the flower through the glass dome that covered it, and after a couple of minutes Adrian removed the dome. When they were finished, Adrian replaced the dome, and instructed the audience-participant to follow him to the next station.

At a bench in the corner of the walkway, Adrian and the audience-participant sat. Adrian then offered the audience-participant a strawberry out of a bowl of strawberries, instructing them to taste it fully, as though they had never tasted it before. He fed the strawberry to them directly, then asked if they wanted a second (and sometimes a third). In virtual reality, feeding them the strawberry meant holding it out towards them, and once their mouth “touched” it, the strawberry would vanish. Leading them to the next station, Adrian instructed them to sit on a large rock, and asked if they would like him to place his head in their lap. If the audience-participant consented, they sat like that for several minutes.



Figure 2: Adrian and the audience-participant at Station 1.

At the following station, they again sat down directly on the boardwalk. In front of them was a stone birdbath. Adrian asked if they would like him to wash their hands, and after consent was obtained he dipped each hand in the water in the birdbath and “massaged” it virtually with his own hands. We discovered that the Quest controllers had built-in haptics that were triggered when another person’s avatar came too close; this was useful here, because it gave a sensation that other stations did not, leading some audience-participants to believe they had experienced the sensation of touch. Then, leading them to the final station, he asked the audience-participant to lie down on a square of grass, then offered to “spoon” them (lying alongside and behind them, so he could place his arms around them). They lay like that for several minutes before standing back up.

Finally, Adrian said goodbye to the audience-participant, inviting them to take a tree “sapling” from a table in the back of the theatre, saying “Maybe you can use it as inspiration to start your own garden.” After picking up one of the seedlings, the audience-participant left through a door in the back of the theatre. Outside the building, still in the VR Chat world, they encountered Reilly’s virtual avatar, and she told them that the performance was finished, and to expect a survey that evening in their email. They then removed their headset.

Version 1

During our summer workshop we brainstormed ways to alter each of the five stations to increase the actor-audience connection. These alterations could be in any form that could be

programmed or animated by us within VR Chat, and often started off as lists of ideas in tables (see Figure 3).

Idea	Version	Notes	Status
A recording of ASMR-like whispering of sensory details about the flower? Describing the scent, the texture, etc	VERSION 1	How can we make the digital image as dynamic/detailed as seeing a live flower? Ideally enough details to justify three minutes of observation.	In progress
Does it slowly morph—perhaps grow or change color—while being watched, a reward for the viewer's focus?	VERSION 1		In progress
Also need a way to draw attention to the sensation of the feet in the dirt. Is it possible to insert quick cuts of video of different feet settling into dirt? Does the Adrian actor just need to draw more attention to the surfaces and how they feel? “Take off your shoes and step into the soil. It was watered yesterday, so it may still feel a bit damp.” Or something similar	VERSION 1		Not started

Figure 3: Partial Brainstorming list for the Flower Station

After collecting dozens of suggestions for each station, we narrowed the list down to ones that were within the scope of our time frame and skill sets. In version 1, when the audience-participant entered VR Chat they began in the same way as before. However, upon meeting Adrian, instead of getting virtually hugged (the result of which could not actually be felt like a hug might be due to the lack of physical contact), Adrian instructed them to put their controllers down temporarily and hug themselves. As they did this, Adrian would wrap his arms around them as before. One of the decisions we made with version 1 was to embrace and acknowledge the virtual nature of the performance and not try to pretend it was “real.” By asking them to set their controllers down and hug themselves, the intent was to give them the physical reality of being hugged while the virtual avatar appeared to be doing the hugging.

The flower station began identically as it had in version 0, but Adrian was able to trigger an ASMR (Autonomous Sensory Meridian Response) recording of a poem that described what the flower felt and smelled like in whisper tones. ASMR has been shown to trigger physical and emotional responses, particularly when whispering is used due to its suggestion of proximity and intimacy (Smith and Snider, 2019, 45). It is effective enough to have been used by at least one immersive theatre company - Whisperlodge has performed to over 1000 audience members across the United States and in Singapore.³ After Adrian lifted the glass dome, the flower began to grow, turning towards the audience-participant and blooming. In the strawberry section, when the strawberries were “eaten,” a sound effect of biting into a juicy piece of fruit was added, as was an animation of a few droplets of strawberry juice spraying from the bitten fruit to give it a sense of “freshness.”

When Adrian placed his head on the audience-participant’s lap while sitting at the rocks, the insides of the theatre and the garden were replaced by a scene of a starry night sky and a nebula. This “transportation” to another environment was intended to suggest closeness and intimacy achieved by getting physically closer to one another. Later, a similar event occurred when the audience-participant lay in the grass with Adrian, transporting the two of them into a sunny, cloud-filled sky.

At the station where Adrian washed the audience-participant’s hands, the only changes made were to add an animation ripple in the water and a towel for Adrian to use on the hands after washing them. The reasoning behind this was that the response to this station in version 0 was positive enough that we did not feel the need to make bigger changes.

Version 2

For the performance at the Spectacles Vivant, Scènes Numériques showcase at the 2025 Festival d’Avignon, the overall environment and animations were cleaned up and optimized for better performance. Special attention was given to the lighting in order to increase the overall level of light in the space and add additional warmth. In addition, station 3 was updated so that when Adrian placed his head on the audience-participant’s lap, the scene shifted slowly to a beach scene with the sound of ocean waves. This replaced the abrupt replacement of the garden with a star-filled sky. Similarly, station 5 was updated with a green field and trees instead of a sky. We made these changes to keep the scene in line with the intention of each station.

³ See <https://whisperlodge.nyc/>

Results

	Overall connection to Adrian		Station 1 - The Flower		Station 2 - Strawberries		Station 3 - The Rocks		Station 4 - Hand Washing		Station 5 - Spooning in the Grass	
	% at 6/10 or higher	Total	% at 6/10 or higher	Total	% at 6/10 or higher	Total	% at 6/10 or higher	Total	% at 6/10 or higher	Total	% at 6/10 or higher	Total
Version 0	83%	69	50%	61	50%	63	33%	54	75%	79	25%	54
Version 1	67%	77	83%	80	50%	69	67%	77	50%	66	42%	61
Version 2*	60%	31	60%	23	60%	32	60%	30	60%	33	40%	26

* Versions 1 and 2 had the same audience, a sample size of 12 and all audience-participants responded to the surveys. Version 2 had a smaller sample size (only 5 responded) and was an entirely different audience in Avignon, France. Version 2's data is included here only to show the complete data.

Figure 4: Survey Results

The exit surveys for *Beyond the Garden of Adrian* asked the participants two questions for each station and for overall connection with our actor. One question asked for a number on a scale of 1 to 10 that denoted how connected they felt in that station (or overall with Adrian). Figure 4 shows both the percentage of audience-participants who rated their connection with Adrian (the actor-audience connection) at a 6 out of 10 or higher for the overall experience as well as for each individual station. It also shows the sum total of the ratings for these. Both numbers are necessary because it was possible to have no increase in one and an increase (or decrease) in the other, as demonstrated by station 2, which had 50% of all audience-participants ranking the connection at 6 out of 10 or higher, but increased its sum total of rankings. This is because more audience-participants increased their rankings from, for example, a 6 to an 8. We considered the connection to be present anytime an audience-participant rated it at above a 5.

We originally believed that there would not be any actor-audience connection present in version 0, and that it would become apparent after we added enhancing elements that could only happen in virtual reality. In fact, the data tell us something else. In version 0, with a sample size of 12 audience-participants, 83% reported that their connection to Adrian was 6 out of 10 or higher (Fig. 4). This number went down in version 1. But the sum total of the rankings increased from version 0 to version 1 in each individual station except for station 4 (where Adrian washed the audience-participant's hands). These numbers seem to be at odds with one another - if the overall connection decreased with version 1's additions, why did the connections at the individual stations increase?

The second question we asked was whether the station conjured any memories. A final question at the end asked if there was anything else the audience-participant would like us to

know. There were too many different and sometimes lengthy comments to share in a concise manner but they fall into a few common categories: comments on positive feelings or associations they had (“it did engage my sense of smell and feelings of awe;” “it was a nice affirmation of the decision to be mindful”); actual memories evoked; and comments on the changes made or the affordances of virtual reality. These are summarized in Figure 5.

	Station 1	Station 2	Station 3	Station 4	Station 5
Version 0	7 positive comments	3 positive comments	1 positive comment	6 positive comment	4 positive comment
	0 memories	6 memories	3 memories	4 memories	2 memories
	0 technical comments				
Version 1	1 positive comment	1 positive comment	2 positive comments	5 positive comments	2 positive comments
	5 memories	4 memories	4 memories	1 memory	1 memory
	4 technical comments	4 technical comments	4 technical comments	3 technical comments	4 technical comments
Version 2	0 positive comments	0 positive comments	0 positive comment	2 positive comment	1 positive comment
	1 memory	1 memory	2 memories	0 memories	2 memories
	0 technical comments				

Figure 5: Summary of comments across all 3 versions

Discussion

Our original hypothesis had been based around the eventual comparison of our audience-participants’ experiences to those of the original audience-participants in Howells’ 2009 production. That original feedback can be found in Howells’s archives.⁴ We had hoped the comments from our exit surveys would show similarities to the comments that Howells received from his audience-participants. We did not expect that comments from version 0 audiences would show as many similarities, if any, as version 1 did, but we were mistaken. In fact, our audience-participants felt connected to Adrian in version 0 and the comments mirrored that of Howells’s audience-participants. In station 1, comments from both audiences focused on the beauty of the flower, its scent, and general happiness that they were able to be present and mindful for a few minutes. One version 1 audience member remembered watching flowers

⁴ From The Papers of Adrian Howells: GB 247 STA AHC 2/1/3/1, Item, Audience feedback notebook, 2007-2009: <http://collections.gla.ac.uk/#/details/ecatalogue/381293>

bloom in the spring at their childhood home; another thought of their mom and her love of flowers. One Howells audience member commented, “The earth between my toes was so wonderful and took me back to my childhood. Looking at and touching the flower made me think of how deep rooted in the earth we are and how pure this little flower is and how difficult it is to be pure and untouched by the toxics surrounding us so that we might grow as healthily as the flower.”

It is worth noting the possible differences in audience makeup and how that impacted the reception of the performances. Howells was performing at the University of Glasgow and had multiple drafts of this piece out to his colleagues and friends. In addition, faculty at the university took part. It is very likely that the makeup of Howells’ audience were scholars, professors, friends, and others who were familiar with his work. In comparison, to get volunteers for *Beyond the Garden of Adrian* our call for participants was shared in various virtual reality discord channels. Not one member of our audience knew who Adrian was, and most were people who had a lot of experience with VR. Because we were part of a showcase in the Festival d’Avignon, our audience was made up of others attending the showcase. Despite the showcase focusing on digital and virtual performance, our audience-participants had very little experience with VR.

In Howells’ original piece, the strawberry station - where Howells fed two or three strawberries to the audience-participant - was one of the more memorable ones. This was true of ours as well, as we had many long comments about this interaction and it conjured the most memories out of any station for our audiences. Most of the memories in Howells’s comments were about childhood - audience members remarked that Adrian reminded them of their father, or that eating them reminded them of strawberries out of the garden, or of past summers. One of our audience-participants commented after experiencing version 1, “In my own garden I had the chance to plant strawberries and the first time I have harvested, I have tasted them and they are the best strawberries I’ve ever had.”

Both station 3 (the rocks) and station 5 (spooning in the grass) were challenging to recreate in virtual reality due to the need to recreate body positions other than sitting. These challenges led to some technical difficulties, particularly in station 5, where the point of view of the audience member had to shift sideways in order for them to experience lying down. This lead to some audience members being able to see below the grass to the underside of the virtual building and took many out of the performance. We were able to improve this with version 2, but it led to many comments about seeing things they were not sure they were supposed to see. When the world disappeared in version 1 this helped, but only because there was no building to see under. Within the scope of the project we were unable to reliably fix this issue, but still managed to give some of our audience-participants positive experiences. These two stations did highlight something that could explain why the overall percentage of those who ranked their connection to Adrian highly decreased while the sum total of those rankings increased: many of the comments in version 1, especially of stations 3 and 5 (where the entire environment was swapped out for a sky or stars) commented on the *affordances* of the medium and not on the connection itself. By affordances, I mean the things that virtual reality can do that real life cannot - for example, swapping entire environments in the blink of an eye, or growing a flower rapidly.

This leads me to believe that these affordances may have distracted from the actor-audience connection itself. At first glance, the positive comments about all of the changes we made between versions seem to indicate that the connection increased, but because they were about technical elements (such as how difficult it is to introduce food into VR, or how “cool” it was to be transported to space) Although one of the 2009 audience-participants mentioned looking “at the sun out of the window,” I am concerned that these responses show that the apparent increase in the actor-audience connection in version 1 was due to the “magic” of VR.

Further support of this idea can be found in the comments and rankings for station 4, the handwashing station. In version 0 this was our highest-ranked in terms of actor-audience connection. Comments talked about “a feeling of connection and being cared for,” memories of being “taken care of by parents.” The haptic response that was present here reinforced in audience-participants that sensation of touch when Adrian washed and massaged their virtual hands. Similarly, one of Adrian’s original audience members commented that “...touch is so evocative and when you were washing my hands and arms I remembered touching my mother - washing her back and legs as she recovered from her hip operation. It is the touch of love!” So why did this station display a decrease in the way the actor-audience connection was ranked in version 1? We believe that this is due to the fact that we did not change anything between versions 0, and 1; suddenly, the station seemed to pale in comparison to the others, each of which had been “improved” by the additional environments, animations, and other types of VR “magic.”

Conclusion and Further Investigations

This performance experiment successfully revealed several potential tools that could be used to better recreate the actor-audience connection in virtual reality performance. Early on we discovered that the use of the right avatar with good facial expressions and the ability to make eye contact, as well as the proper use of the physical body to translate realistic body positions and movements into the virtual space were key to creating a greater sense of realism in the experience. When we attempted to recreate body positions through the use of animations in stations 3 and 5, allowing Adrian or the audience-participant to lie down, this sense of realism was lost and audience-participants commented on being taken out of the performance. In order to successfully make these moments work, other approaches could be attempted, such as allowing the audience-participant to actually physically lie down rather than remaining seated or standing and relying on an animation to change their point of view.

The individual stations also revealed further information about creating that connection and what levels of intimacy helped or hindered it. The simple changes made at the flower station and the strawberry station improved participants’ experiences significantly. The intimacy level of the hand washing station generated the intended connection between the audience-participant and the actor, as well as creating those feelings of being served and cared for that were central to Howells’ practice. However, the environmental changes during Stations 3 and 5, while

successful in creating a sense of awe and giving some audience-participants what they wanted in terms of the VR experience, left it unclear as to whether the connection with the actor was improved by the environmental changes. Data from version 0 suggests that the actor-audience connection was present without any additional VR effects, and that connection was possibly lessened by bringing in non-realistic effects.

By comparing the comments from our exit survey to those of Adrian Howells's audience-participants after the 2009 performance, we see striking similarities that suggest the actor-audience connection and empathy with the actor was as present for most of our audience-participants as it was for the original. Similar memories were triggered and similar feelings of mindfulness and peace were present. One comment left by an Avignon audience member after experiencing the performance spoke to the success of the project: "This experience allowed me to be in the here and now." Through the use of SPaR, we iterated the virtual experience of *Beyond the Garden of Adrian* into one we are confident elicited empathy and feelings of connection.

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