

Opening The Door in Question: simulating schizophrenia and psychosis in XR and transmedia experiences

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INTRODUCTION

Summoning the fire – backgrounds and motivations

As an artist and researcher, my work focuses on the creation of Extended Reality (XR) and transmedia storytelling experiences which seek to convey and explore experiences of Schizophrenia, delusional belief systems and psychosis. This work is borne from a deeply personal place. My mother was diagnosed with schizophrenia, well before I entered the world. However, her illness was so debilitating that she became unable to care for me and I was ultimately made a ward of the state. Interactions with the mental health and legal systems never seemed to help her and our relationship was severely damaged as a result. Many sought to dehumanise her, both within the family and without. At times in my life, I too have been prone to psychotic episodes and I too have found limited help within the medical model of mental health. Most pressingly, I was struck by the persistent pathologising in the field of psychiatry and the unwillingness to engage with core emotional issues. Mental health issues have deep emotional

histories, but these are often left completely ignored in favour of numbing medications, whilst a lot of society either dismisses a person as crazy, or awkwardly turn away from uncomfortable behaviours without trying to understand them. It is for this reason that I have dedicated much of my time as an artist to researching and understanding schizophrenia and psychosis at a deeper level and is what has inspired me to use my practice to make XR works which transport people into the psychotic universe.

This article isn't an autobiography, nor a critique of the mental health system. However, this information is nonetheless important in underscoring the importance of us doing better as a society at understanding severe mental health conditions properly. Whilst public health initiatives such as *R U OK Day* and *Mental Health Awareness Month* are important (Kelly et al., 2007), this really only scratches the surface. People are still not understanding how to recognise mental illness and are also unwilling to help (Flourish, 2016). We see severe 'othering' and misconceptions about the origins of mental illness (Walsh & Foster, 2020) and people still believe that schizophrenics are more likely to commit violent crime when, in fact, they are more likely to have violent crimes committed *against* them (Varshney et al., 2016; Wehring & Carpenter, 2011). In the arts and entertainment, we still have the tendency to demonise and further stigmatise mental illness through caricatures. Bramesco (2017) discusses how the blockbuster *Split* (Shyamalan et al., 2017) is part of a lineage of misunderstanding of what is truly scary about mental illness. Johnson and Olson, (2021) offer a more wide-ranging critique of representations of mental illness across entertainment media. In *The Philosophy of Madness* (Kusters & Forest-Flier, 2020), Wouter Kusters describes psychosis as the escape from all language – a liberation by fire from the house of being. He argues that mental health professionals fear getting burnt from this fire if they get too close and that they are not interested in the highlights and pitfalls of madness at all. Instead, they seek to make it a clear and distant object to eradicate.

It could be said that what mental health professionals miss are the worlds created by psychosis. At the very least, they miss the different perspective on the same world that psychosis generates. As creatives working with technology, we have the capacity to build these worlds – simulations, if

you will – and embed audiences, participants and players in the subjective experience of another. The purpose of this article is to demonstrate how, through creative practice we can lift understanding of severe mental health issues by building contemporaneous psychotic and delusional belief system simulations through XR and transmedia theatre works. This is done primarily in relation to my XR Theatre work *The Door in Question*, August 2021 iteration, which is largely based on my lived experience and the writings of my late mother. In addition, existing clinical and simulations of schizophrenia and psychosis are examined, to illuminate what it is that *The Door in Question* does differently. Some other XR works that do not explore mental health are also discussed. Along with the autoethnographic foundations of my research, my practice is informed by psychological-phenomenological understandings of schizophrenia as well as neurodiversity. At times this will be drawn on, but it is not the main focus of this article.



Image 1: Photo of people in custom wheelchairs, watching a 360 film.

Key Terms

XR refers to the integration of all ‘real’ (physical) and virtual realities found in the *reality-virtuality continuum* – a continuous scale which is used to plot

the spectrum between a completely virtual, and a completely real, reality (Paul Milgram et al., 1995). For the purposes of this article, XR can be thought of as an umbrella term, encompassing 360-degree film, Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) simultaneously.

Reality – Virtuality Spectrum

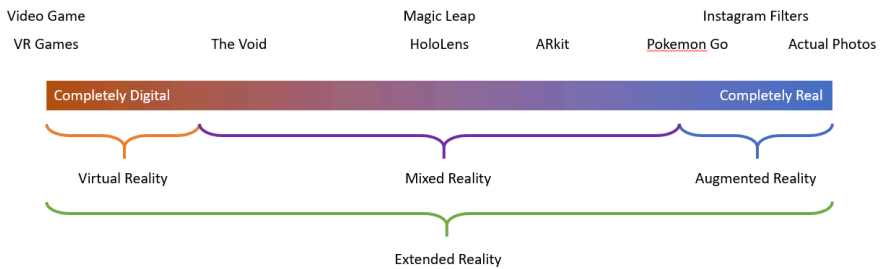


Image 2: Adaptation of Reality-Virtuality continuum. (Paul Milgram et al., 1995; Skarbez et al., 2021)

Transmedia storytelling is where elements of a fiction get dispersed systematically across multiple delivery channels in a cohesive story (Jenkins, 2010).

Technodramaturgy (Cegys & Weijdom, 2020; Fernandez, 2016; King, 2018) is an evolving approach to creation where technology is understood to play a more pivotal role in the formative processes of creative work. This concept is discussed in depth in the section: *Technodramaturgy in XR*.

SIMULATING SCHIZOPHRENIA AND PSYCHOSIS IN XR

Clinical and Artistic Simulations

Slater et al., (2010) explore First Person Experience of Body Transfer in Virtual Reality. This used first-person perspective (1PP), motor and touch synchronisation in a VR context to facilitate a body-ownership-illusion

(BOI). Slater et al. argue that 1PP creates significantly higher levels of empathy through a transfer of self. Linda Joy Gerry, and the *Machine to Be Another* project (Gerry, 2017) presented a gender swap experience to facilitate such empathy. Gerry argues for 'Virtual Alterity' – a process that activates both automatic and volitional (active) empathic processes by maintaining a self-other distinction that is not present in Slater's work.

Some artists have taken a broader based approach to simulation of the subjective experience and, in particular simulation of psychosis. *The Wearable* (Kanary Nikolov(a), 2016) is an interactive augmented reality cinema walk that functions as a 'do-it-yourself psychosis-kit'. *Altered States of Consciousness* was a live art experience that sought to simulate voice-hearing through live audio-feeds to the participants headphones. (Maskey, 2017; Riches et al., 2018). Both these works show the capacity for art to lift immersion levels in simulation through a more proactive dramaturgy.

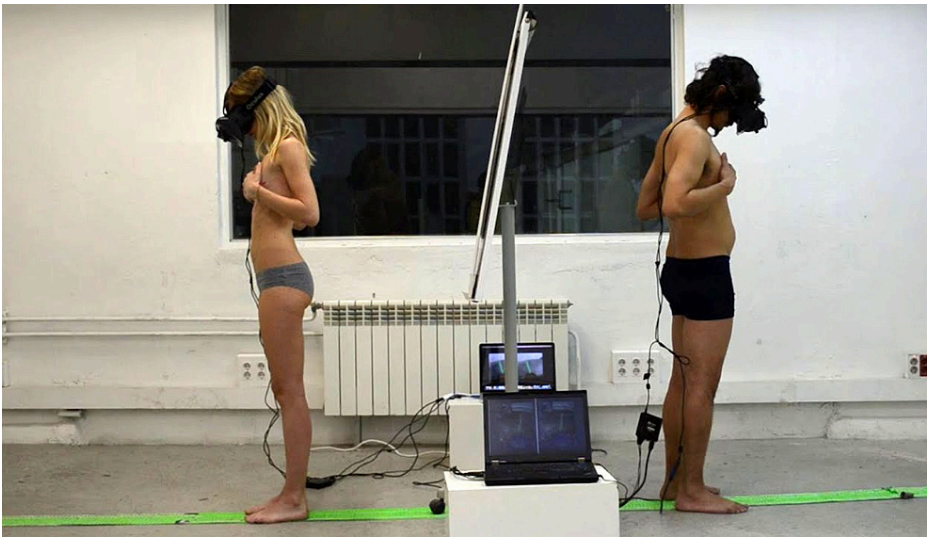


Image 1: Photo of *The Machine to Be Another's* Gender Swap experience. (Gerry, 2017)



Image 2: Image from The Wearable (Kanary Nikolov(a), 2016)

On the whole, clinical simulations appear to focus on a symptomology of psychotic experience, such as ‘voice hearing’ (Riches et al., 2018; Tabar, 2007; Wieland Diane et al., 2014), fractured vision (Kanary Nikolov(a), 2016) or delayed event-based reaction times (Spanlang et al., 2019). The latter was a VR experiment used by Spanlang et al. to argue that their simulation had the effect of ‘fragmenting the consciousness of healthy participants’. Such claims do seem an overreach. Whilst these works make use of some VR technology and do provide useful insights, their inherent minuteness of focus makes for a lack of world-building and, subsequently, experience immersion, for participants. It is therefore difficult to assert that such works do, in fact, simulate experiences of psychosis or schizophrenia in an effective manner, let alone fragment the consciousness of healthy participants.

The missing worlds - moving closer to the liberating fire of madness

If we are to move beyond symptomology in simulations or, in line with Wouter Kuster’s (2020) assertions, dare to get burnt by the fire of madness, then we need to be able to use XR technology to illustrate what happens at the psychological-phenomenological level of schizophrenia. Here, we explore research in the phenomenology of schizophrenia and discuss

some of the impacts these understanding have had on the creation of *The Door in Question*.

Fuchs (2015) understands schizophrenia and 'mental illness' as an extended phenomenon – a process always taking place in between the patient and others. He describes schizophrenia as a breakdown of intersubjectivity – a disturbance of one's embodied interaction with others. In other words, rather than pathologise mental illness as a brain dysfunction he describes a process where an individual lacks flexibility to switch between one's own and other's points of view. When dealing with schizophrenia and delusional belief systems, he posits that a sense of being-with-others in a process of shared reality-making is replaced by a sense of detachment that may pass over into threatening alienation. That is, one may recognise another's existence, but may not recognise them as a mental agent of their own and thereby some may interpret other's actions as being wholly persecutory towards themselves.

In *The Door in Question*, participants are placed as the subjective mediator between two realities – embodied within a psychotic episode across virtual and physical reality. This is highlighted in the section '*Transition to Physical Reality*' where participants see a live camera feed of their physical selves displayed within a Virtual Reality environment inside a headset. This calls attention to their own reality making processes, showing them, for the first time within the experience, that they are an integral part of the story, witnessing their own intersubjective collapse.

Other psychological-phenomenological analysis of the sense of self experienced by people in psychosis is offered by Bradfield & Knight (2008) and Kusters & Forest-Flier (2020), whilst linguistic behaviours are discussed by Covington et al. (2005), and parallels with transcendental mysticism are discussed by Parnas & Henriksen (2016). Such insights offer both understanding and points for inspiration in the development of *The Door in Question*. These deeper considerations of subjective experience are necessary to understand in the process of creating a simulation of schizophrenia. Any XR experience which aims to assert itself as a simulation or representation of such a complex 'mental disorder' will be

lacking in presence and perspective, without considerations of the subjective experience from the psychological-phenomenological level.

Technodramaturgy in XR

The Transition to Physical Reality example from *The Door in Question* could be described as a use of *technodramaturgy*, which is a term we will discuss here and one that is important in lifting the quality of psychotic simulation. XR and transmedia experiences, though still relatively new, appear to be in a state of transition from an emergent to a maturing state. An emerging field of practitioners are considering the application of immersive XR technologies within a dramaturgical setting more deeply (Bohse Meyer, 2020; Cegys & Weijdom, 2020; Davies, 2009, 2019; Fromell, 2018; Joris et al., 2018; Kates, 2020). This involves more than an 'updating' of traditional theatre, where technology provides solutions to creative problems, or better-quality lighting and audio systems are used. This *technodramaturgy* is emerging (Cegys & Weijdom, 2020; Fernandez, 2016; King, 2018), and is an evolving approach to creation where technology is understood to play a more pivotal role in the formative processes of creative work.

Theorist and Playwright Anchuli Felicia King credits herself with the term's coinage. She describes it as dramaturgies that arise from the use of a given technology, and does so in relation to Gregory Doran's production of *The Tempest* at the Royal Shakespeare Company (King, 2018), which uses motion capture driven avatars. However, King does not appear to have coined the term. Stephen Fernandez (2016) refers to a framework of 'critical techno-dramaturgies' that facilitates the design of an intermedial performance whilst critically analysing human-machine interaction in performance. Cegys & Weijdom (2020) the creators of Blue Hour VR, use the term to describe an iterative feedback system between the technology and creation process through embodied improvisations. Blue Hour was a work where people experience a work in VR, but do so inside a sports stadium filled with set, lighting and audio design, along with five hundred other people wandering the space simultaneously.



Image 3: *Blue Hour VR* (Cegys & Weijdom, 2019)

Similar concepts appear in the literature under different names. Kates (2020), the creator of *Bury The Wren* (An XR performance of the story of the Donnelly family, who were burnt to death by begrudging townsfolk) refers to a “digital dramaturgy”. Bohse Meyer (2020) describes a ‘double scenography’ when analysing Makropol’s *Anthropia* work, whereby virtual and physical realities are equally accounted for in staging a work.

Technodramaturgy is central to the creation of *The Door in Question* and is something of a key missing ingredient from this article’s aforementioned simulations. Indeed, if we are to be constructing a contemporaneous delusional belief system, it should be multimodal and deploy a large variety of media and technology in order to create a world *surrounding* a participant – so much so that that it becomes truly difficult to discern where the boundaries lie between fact and fiction. For *TDIQ*, technodramaturgy is the glue that binds these disparate technologies together and describes how they function at both the technical and dramaturgical levels within the performance as well as the narrative itself.

THE DOOR IN QUESTION – TOWARD A TECHNODRAMATURGY

FOR FRACTURED MENTAL STATES

This section discusses *The Door in Question* project in depth. It will describe the technology used as well as the surrounding dramaturgical application with a discussion on how the elements are integrated. What is presented should not be considered fixed, but more as an evolving example of an XR technodramaturgy for schizophrenic states that will be iterated on and extended upon. Each item discussed will be developed further in subsequent iterations of this XR experience, so what is outlined below will serve as a formative methodology to develop from.

Narrative Foundations

The script and scenography for *The Door in Question* August 2021 iteration was developed mostly using a combination of my own experiences, as well as writings of my late mother. This included childhood stories and presents, filings to courts and other authorities and accounts of interactions between my mother and others – among other things. I approached this material with a view to creating a cohesive narrative able to be understood by people outside of my own family. I framed the overarching narrative around a childhood birthday card I received which outlined – to my 11-year-old self – the phallic symbology of the snake and the mythological story of Medusa and tied this to a longer child's reader that my mother made me, which I used to develop a 360-degree film which forms part of the experience. Four characters exist within a delusional world – mummy, hottee, a child and a strange bureaucracy known as the World Congress. According to the first three characters, The World Congress is attacking them with a sonic weapons program (known as MEDUSA – Mob Excess Deterrent Using Silent Audio), intervening in their lives through all means possible.

Beyond the Medusa references, I identified four key delusions to spread across the narrative:

- Being sired via illegal artificial insemination.
- Allegations that legislation is made in ways that bare semblance to witchcraft, which is/was illegal.

- Killing a home invader in a bathtub.
- Accusations that my father tampered with electrical wires to deliberately harm my mother and myself.

VR HMDs

The aforementioned 360 film introduces participants to the characters of the experience and to the world at large. This was largely shot from a child's Point Of View but is narrated by several different characters to introduce multiple perspectives and interpretations of the same events.



Image 1: Still from "Mummy, Hottee and Little Boy" – 360-degree film content within TDIQ (Peterrs & Rainbow, 2021)

Participants watch this film seated in a custom-made wheelchair, shown in Image 1.1. Whilst in this figurative blindfold, they are wheeled to four separate rooms, each representative of one of the characters in the film.

Transition to Physical Reality

A transition from 360 film to Virtual Reality occurs, where participants find themselves in a virtual (Point Cloud) environment with a live camera feed of themselves inside a strange room projected back to them inside the

headset. They are transitioned out of their handset by a character who dramatically infers, through pre-recorded narration, that they should take off their headsets.

Knowing the importance of the moment that occurs when leaving a VR headset (Knibbe et al., 2018) and the pivotal role this would play in creating a sense of fragmentation, I devised a narrative line and musical motif that would not 'break the spell' but also instruct the participant to remove their headset of their own volition. I chose the most authoritative sounding character to speak the following lines:

If you are, somehow, of the belief, that affixing a device to your head will help you to escape yourself, you are surely – and sorely – mistaken!

This, in combination with seeing oneself on a live feed in a VR headset, was remarked upon as an equally terrifying and exhilarating moment by participants – one that framed to them they were inside something that was inescapable; something akin to Wouter Kusters (2020) description that 'psychosis presents itself to the psychotic as an inescapable truth and reality.'



Image 2: Virtual Reality space of 'child's room' – TDIQ. NB: This is test footage, which displays a stream of a street where the participant would actually be viewing themselves. (Lovell & Rainbow, 2021)

Here is a comment from a participant, describing their experience at this moment:

I look above the top right corner of the chimney, to discover something that lifts my stomach. I am myself being watched, I see myself, in complete darkness in an unknown room. I quickly remove the headset and headphones to discover that I am no longer in a virtual experience but in someone's living room, a place I've never been too, that has been turned upside down from what I can sense in the dark. I feel a sense of utter loneliness and helplessness wash upon me in unknown chaos and feel the urge to try to escape. [I am surrounded by] a delusional form of love that [feels] like imprisonment, like a shuttered soul.

Transmedia installation

Once participants remove their headsets, they each find themselves in a separate character's room. Here, they experience separate narrations. Each room contains embedded speakers, as well as directional speakers and a combination of interactive and programmed lighting sequences that occur in highly detailed set designs across four rooms – a bathroom, a lounge room, a court room and a child's bedroom. Each room also contains a TV screen. In this transmedia environment, participants experience narrated stories from the characters explaining the first-person accounts of delusional experiences. AI rotoscoping is used to represent the characters on the screens. In addition, participants experience exchanges between the characters where conflicting narratives seem to occur. Specific smells are used for each room, in line with Klich's 'Visceral Dramaturgies' (Klich, 2019) to create further presence. At other points, live camera feeds from opposing rooms display on the screens in the rooms, giving brief insight into another's experience, but making one uncertain of who it is that may be watching them as well.



Image 3: 'Child's Room' in TDIQ (Delaney, Peters, Rainbow 2021)



Image 4: 'Mother's Room' in TDIQ (Delaney, Peters, Rainbow 2021)

Delusion Bot

This section is contributed by Lee Meyer, AI programmer for The Door in Question.

Deployed in *The Door in Question*, 'Delusion Bot' draws on ConceptNet Semantic framework (Speer et al., 2019) and synthesised versions of the voice actors voices developed with Microsoft's Custom Neural Voice. The result is a phone call that the participants experience partway through their transmedia based psychotic episode, where they answer a series of

questions. Delusion Bot takes the participant's input and devises a series of associations to tie the input back into a pre-programmed delusion found in the *Narrative Foundations* section of this document. In turn, the phone call interacts with the Audio-Visual server so that the input of the participant affects their transmedia environment.

Through an absurd word-association game halfway through the performance, Delusion Bot simulates chronic, systemic delusions in the way that they incorporate themselves into every area of a person's life through elaborate logic and leaps of logic (Norra and Hoff, 2007). Research indicates that paranoid variety of delusions are the most common when delusional thinking sets in at a later stage in life (Paolini, Moretti and Compton, 2016). That finding matches Troy's experience with his mother. There is a persecutory and paranoid element played up in each of the four possible randomly selected delusions that Delusion Bot can output at the end of its delusional strings. Here is a transcript of a conversation between a participant and the Delusion Bot:

Delusion Bot: 'It's me. The penis is symbolised in psychiatry by the snake. Psychiatrists like to play a game with their patients. I say a word, then you say the first word that comes into your head. Got it? Ok, what do you think of when I say Library?'

User: 'Silence'

Delusion bot: 'Relaxing requires silence. Going outside for an evening causes relaxation. Going outside for an evening causes cancer. Cancer is a disease. Domestic violence is a disease. Hottee tampered with the wires to make us freeze to death as a form of domestic violence.'

Although the bot introduces the conversation as a game, any response the participant makes will cause the bot to reply with humorously snarky comments, hanging up in disgust after the third response. The completion of the call triggers jump-scare effects in the room via OSC commands sent to Ableton and Resolume. This simulates the experience of a "parentified child" that becomes an extremely critical inner voice in an adult who in childhood was made to feel responsible for parental figures who caused the environment to be chaotic (Shwartz and Sweezy, pp. 144, 194, 223). Using Azure Custom Voice, the Delusion Bot synthesizes the voice of the actor who plays the character represented by the room in which the call is

received. This symbolizes the blurry line between inner voices and family members from childhood. We simulate the delusional brain using a graph database built from ConceptNet which is a knowledge graph of relationships between concepts. The bot traverses this graph from the concept mentioned by the participant to find an association between the input and one of four primary delusions. Since it's an experience recommended for mature audiences only, we switched off the profanity filter for participants' input and the output from the bot through Custom Voice, so the conversations can be as unpredictable and offensive as possible. When reviewing the call recordings, we observed participants laughing at the absurd leaps of logic and pre-programmed snarky responses. Our intent is comic relief midway through what can be an intense experience, but we are also making a point about the absurdity of the participants' own inner critics, encouraging them to laugh at their own disparaging inner voices but not at mental illness itself.

For future iterations, we have been able to obtain access to the private beta of GPT-3, a huge neural net that is the state of the art in natural language generation (Floridi & Chiriatti, 2020). The Door in Question has always been about creating more questions in the participant's mind than answers. In future we'd like to use longer generated AI responses based on freeform user input to shape the experience and let participants co-author their own experience and teach us about what it all means, rather than us telling them.

Directional and immersive audio

The technodramaturgy is integral to how the technology informs the narrative development and vice-versa. As such, in *The Door In Question*, the question of how to integrate themes of Medusa into the technology arose. When researching the phenomenon of Targeted Individuals and Gang Stalking (Sarteschi, 2017) as well as sonic warfare (Friedman et al., 2019), I discovered that certain sonic weapons are referred to under the acronym MEDUSA – Mob Excess Deterrent Using Silent Audio (Hambling, 2008). This served as a narrative turning point. Given this consideration, and the disappointment with the results I had from some tests of directional speakers/parametric arrays at broadcasting the 'inner voice'

of characters, I repurposed the technology as a narrative device in and of itself – a sonic weapon. Using Virtual ANS, I created sounds based on isolated frequencies that could give the effect of being attacked by a sonic weapon. In turn, this drove numerous other plot devices within the experience.



Image 5: Mannequin holding a directional speaker, which acts as a sonic weapon within TDIQ (Rainbow, 2021)

Embedded Characters and the Fleeting-Improvised-Persons

Schreber (1903) makes consistent reference to the concept of ‘fleeting-

improvised-men'. Schreber reported that, whilst housed in Sonnestein asylum, he physically experienced the dissolution of souls of the people around him. From the point of dissolution, Schreber posited that he held true communication with the individual whose soul had dissolved. Any physical manifestation of that person that appeared from that point forward was a 'fleeting-improvised-man' – a shell, or make-believe version, of that person. Anything that was said to Schreber by these Fleeting-Improved-Men was not to be believed over the communication which he had with that individual within his own mind.

As a character that simultaneously can be anyone and no one, fleeting-improvised-people are uniquely positioned within the Virtual and Physical worlds that are created. They can appear in both worlds and be any character. They also serve as a useful way to transition people between the worlds. These figures may act as a blank canvas for audience participants to project the stories they are hearing onto.

In addition to this, *The Door in Question* contains embedded characters. From the moment a ticket is purchased, communication with characters within the experience begins. All ticketing information and material is performed by a character who is later referenced numerous times within the experience. This is technodramaturgy at it's simplest – using technology to communicate in character to blur the lines between what is real and what is not.



Image 6: Fleeting-Improvised-Person guiding a participant in TDIQ (Rainbow, 2021)

IMPACT AND REFLECTIONS

Ultimately the notion that one can simulate the mental experience of another person is, arguably, not possible – not in any sort of 1:1 relationship. There are simply too many variables at play. What VR technology affords is a sort of submersion tank, whereby the visual artifice convinces the wearer of a HMD that what they are experiencing is somewhat closer to another reality, even if they don't rationally believe it. A person who died in a chainsaw simulator for workplace training for instance, would not believe that they died, but having conducted the training in a headset may embed a deeper automatic recall when on the job than if they had completed the training simulator on a 2D system due to increased immersion and embodiment levels.

Indeed, placing someone in a headset with a simulation of what someone might experience during psychosis may create a greater sense of empathy for participants. However, are we really simulating a different reality if we are not playing with where the boundaries of physical and virtual realities are? What the door in question aims to do is simulate the subjective experience at the psychological-phenomenological level trying to bring

people inside the liberating fire of psychosis, through its complex mix of technology (not just a HMD) in a singular experience.

Unfortunately, a COVID-19 lockdown in Melbourne, Australia interrupted the August 2021 season of *The Door in Question*, placing it on hold. Because of this, we still await further reception and feedback at the time of writing. That being said, several shows did go ahead and elicited deeply emotional responses from participants. Perhaps the most profound learning is the way in which participants automatically related their own life experiences to the situation they found themselves in. I have included some anonymous testimonials to highlight some of these, without too:

I feel a sense of utter loneliness and helplessness wash upon me as I am cast physically into this unknown chaos and feel the urge to try to escape. I fight the feeling and choose to remain into my seat, trying to calm my mind down. I look more closely around me, the light changes violently, I see myself on an old tv screen on my right, I see every corner of the room taking on a new face as the play of lights and shadow sculpt the space. Nothing for my eye to rest on. The face on the screen that used to be mine let place to a amorphous face of mother. I feel her around me, I feel her pain and suffering and I feel her inside me. Her perfume embalms the room, like an ancient tomb and her ghostly presence crawls under my skin. I hear her thoughts, her story, with unsettling familiarities with my own.

This was so much so that, for one person, their memory of the events was impacted. Where a woman that was yelling at them within the experience, the participant remembered it as a male. This suggests that their sense of embodiment within the experience was so high that their perception was quite strongly altered.

It should be noted that, by design, *The Door in Question* intends to elicit differing perceptions among participants, dependent on the path they take in the experience. In the August 2021 iteration, participants experience one film at the beginning. However, four separate, individualised experiences follow thereafter. The intention with this was to see how participants interpreted their first experience once they experienced the second. Even though the story had no clear conclusions to it, there were drastic differences in the way participants felt and interpreted the events. Again, given the lockdowns, it is difficult to infer anything conclusive, but this is

something that will be researched and observed further when the season reopens and through subsequent iterations of *The Door in Question*.

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