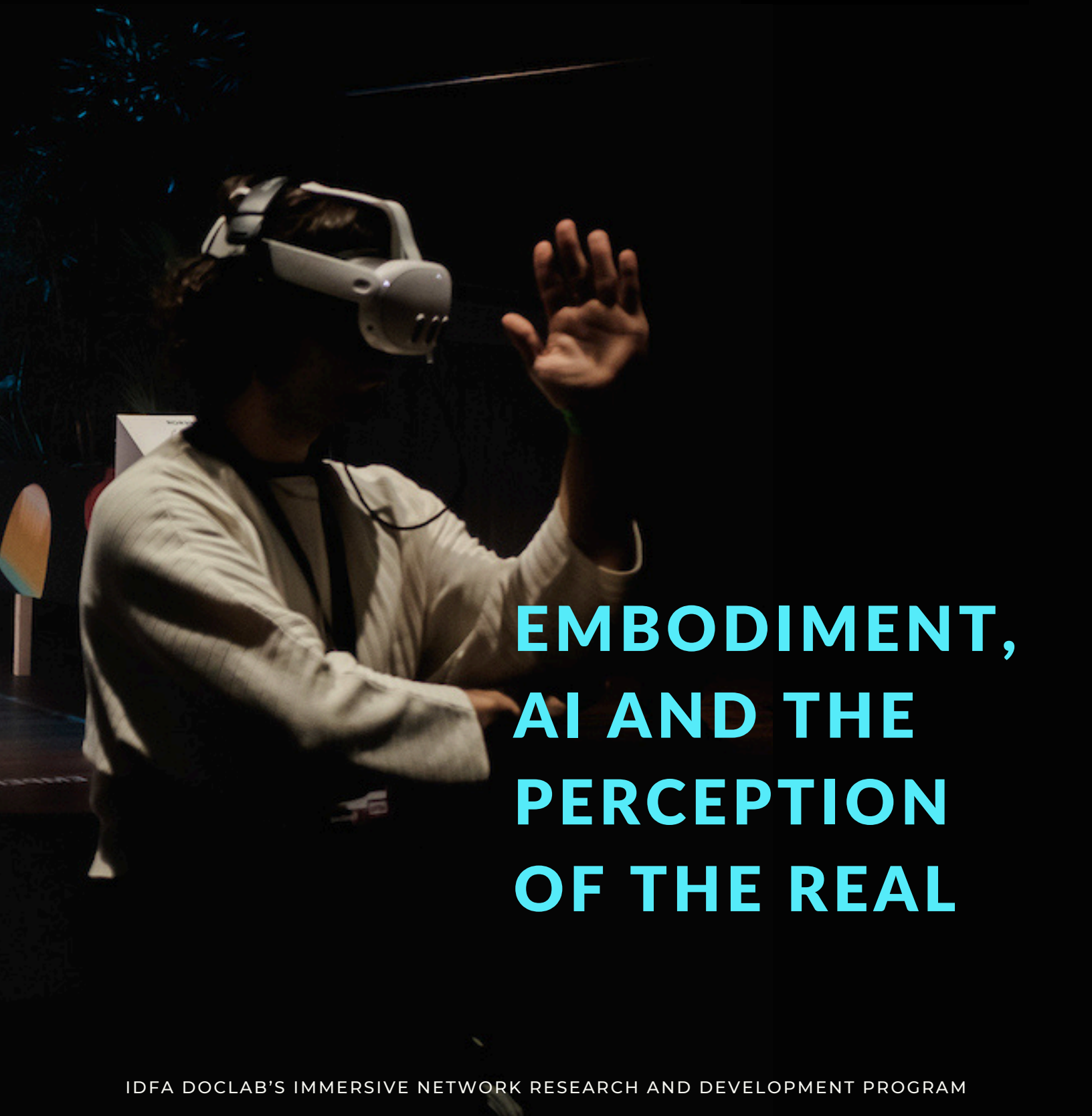
MIT OPEN DOCUMENTARY LAB

idfa International Documentary Film Festival Amsterdam



# EMBODIMENT, AI AND THE PERCEPTION OF THE REAL

IDFA DOCLAB'S IMMERSIVE NETWORK RESEARCH AND DEVELOPMENT PROGRAM

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**Front cover image credit: Bernard Kalu @kabenny_**

# EXECUTIVE SUMMARY

As creative media technologies continue to evolve, we are seeing expansion in the ways in which participants' bodies are drawn into the produced experiences. Embodiment, on the one hand, is a persistent state of being human, and so any media experience is to some extent embodied. However, the affordances of immersive and interactive media technologies enable more explicit forms of embodiment, where movement and multi-sensory approaches can be incorporated into the progress of a work.

These technological developments that enable embodiment are being increasingly used by documentarians to experiment with representations of the real. The nonfiction project is expanding forwards, as makers and audiences not only examine reality but constitute it, at times through physical interaction. While there might be a tension between documenting the real and creating the real through an interactive experience, tensions can offer creative avenues for exploration.

At IDFA DocLab in November 2023, MIT researchers explored how the different forms of possible embodiment were being used by artists, and how they had impact on audience experience and understanding. We wanted to understand what strategies and tools artists are using, how these projects are being received by audiences, and whether the knowledge communicated or experience delivered is distinct from that shared by more traditional forms of flat screen media.

We also wanted to find out whether and how discomfort was being used in creative ways by the projects. Discomfort is a challenging notion in media – on the one hand we're getting better at spotting and preparing for it, for instance we now know the importance of trigger warnings. On the other hand, many of us are retreating into filter bubbles so we are less likely to be presented with uncomfortable truths, or ideas that unsettle us. We can avoid discomfort of the conceptual variety with some ease. So are artists finding ways to reinsert some discomfort, to trouble us with unease?

Early immersive media experimentation often purported to offer a fully virtual reality, distinct from the physical world. Now, we see increasingly creative approaches that ask critical questions of our perception of reality and toy with slippages, many of which use embodied practices to do so. Also, given the explosion of tools using Artificial Intelligence in the last year or two, we aimed to examine how these were being used in the expanded documentary field, and how they might connect with this questioning of realities. Following is a list of the key takeaways from the research.

## KEY TAKEAWAYS

1 **Waking up the body is a new grammar of expanded documentary**

Many artists are taking time early within their projects to gradually familiarize audiences with an embodied approach.

2 **Embodied experiences offer productive challenges to audiences**

A sense of embodiment presents several challenges to audiences – it challenges perception and focus, and is a useful strategy for eliciting creative discomfort. Discomfort can also provoke a consideration of technology.

3 **Embodied experiences highlight layered realities**

Artists are moving beyond the aspiration to offer participants an experience of 'walking in another's shoes', to recognize and highlight the slippages between realities offered by creative technologies.

4 **Audiences are comfortable moving between these layered realities**

Survey results demonstrate that audiences understand there can be multiple perceptual layers to stories and are comfortable traveling between them.

5 **Documentary is an ideal genre for addressing and playing with Artificial Intelligence**

Projects continue to push beyond the 'critique-or-embrace' binary, finding nuance in big questions around AI. Makers are reflexively using the tools to interrogate the concepts, using audience bodies as a site of engagement, and also finding benefits to the technologies even amongst strong critique.

# INTRODUCTION

Audience member experiencing *Emperor*.
Image credit: Bernard Kalu @kabenny_

# INTRODUCTION

Embodiment is a persistent state of being human. You are embodied now, as you read this report, you are embodied when you're in a cinema (perhaps you stiffen in a scary moment, or your heart races while observing a moment of jeopardy), when you're pointing and clicking in an interactive documentary, and when you're strapped into a haptic backpack and feeling a fan blow wind at you.

Embodiment as a term has been adopted and adapted by the field of technology development and interaction design, somewhat away from its original meaning of representing a quality or an idea. It has become a useful descriptor of this feeling of being in one's body, or rather just *being* one's body.

Human-computer interaction scholar Paul Dourish wrote the influential book 'Embodied Interaction' in 2001, in which he describes our persistent embodied state and points out that we meet the world with our whole bodies.[1] He says, "a disembodied brain could not experience the world in the same ways that we do, because our experience of the world is intimately tied to the ways in which we act in it." Further, he describes embodiment as not just relating to physical reality, but as "a form of participative status" (p18). In other words, embodiment is not just being, it is also doing.

While it is true that we are consistently embodied, immersive and interactive forms of media can support and encourage a greater awareness of our embodiment. For this research, we were interested in exploring how the various tools and techniques that are continually evolving in the field of expanded documentary might support this awareness, and whether this might enable different modes of communication and perception.

1 Dourish, P. (2001). *Where the Action Is: The Foundations of Embodied Interaction.* MIT Press.

Kilten et al (2012) studied the sense of embodiment provided by VR, and attempted to tease out some of the confusion about different ways of describing or measuring embodiment. They offer a definition in which a sense of embodiment is made up of three elements: "the sense of self-location, the sense of agency, and the sense of body ownership." [2] This echoes Dourish's point about action being an inherent part of embodiment.[3]

Deniz Tortum, one of the creators of *Shadowtime* which is included in this research, wrote his master's thesis on what he described as 'embodied montage'.[4] Taking the concept of embodied cognition, the connection of physical activity with perception and cognition, he fits it to the XR world and places this activity within a computational environment. Tortum sees space here for "creative intervention into action and perception", which is apparent across all of the projects examined here.

To be clear, we are not proposing that there is a hierarchy of embodied approaches, nor that more active embodiment leads to deeper understanding. Instead, we are interested in different ways of knowing – is embodied knowledge different? Do some stories connect more closely to embodied interaction? How does embodied interaction have impact upon the perception of reality? (Turns out this is a meaty question). Does embodiment change how we understand, how we experience media? Do we have embodied ways of knowing, forms of knowledge that we can tap into differently, and what does this mean for how we represent and perceive the real?

2 Kilten, K., Groten, R., & Slater, M. (2012). The Sense of Embodiment in Virtual Reality. *PRESENCE: Teleoperators & Virtual Environments*, 21(4), 373–387. https://doi.org/10.1162/PRES_a_00124

3 Sita Popat also writes in depth about intersections with embodiment, VR and theatre: Popat, S. (2016). Missing in Action: Embodied Experience and Virtual Reality. *Theatre Journal*, 68(3), 357–378.

4 Tortum, H.D. (2016). *Embodied Montage: Reconsidering Immediacy in Virtual Reality* [Masters thesis] https://cmsw.mit.edu/wp/wp-content/uploads/2016/10/326754928-Deniz-Tortum-Embodied-Montage-Reconsidering-Immediacy-in-Virtual-Reality.pdf

The features of interactive and immersive media forms have supported and extended embodiment in large and small ways as they have evolved over recent years. In the early days of DocLab, 15+ years ago, projects invited clicking, dragging, selecting, navigating. Virtual reality (VR) projects began to emerge, often involving only the eyes and ears to begin with, but soon expanded to involve other forms of bodily engagement. The extended reality (XR) field expanded yet further to include projects with and without headsets, projects that ventured out of the exhibition space and invited exploration of the physical world, projects accessed via mobile devices, projects with room scale installations and complex sets, and projects that invited audience members to interact with each other.

The projects under exploration in the 2023 DocLab include a range of forms of embodiment – positional tracking, sitting and standing while wearing head-mounted displays, hand tracking, whole body movement, sitting with an audience in a lecture environment, simulated movement, embodying virtual characters, and interaction with other participants.

Audience members experiencing XR projects at the 2023 IDFA DocLab festival. Photo by Bernard Kalu @kabenny_

## DISCOMFORT AND PHENOMENAL FRICTION

At the opening event of DocLab 2023, artist Luna Maurer gave a performance lecture exploring the theme for DocLab, 'phenomenal friction'. She observed that many narratives around technology tend to focus on efficiency, and hold an assumption that smoothing out bumps is always necessary. Maurer reminded the audience that in the creative fields, friction has a weight, a purpose. Discomfort has long been a creative tool of artists, as a foil for uncomfortable ideas and as a way to push audiences to think deeply and consider alternative perspectives. Documentary, too, has often used this as a strategy, demanding audiences sit with sometimes difficult stories. So we want to know, how are makers using the tools of XR to elicit discomfort? How does this connect to embodiment, and how are audiences responding?

## HOW HAS THE USE OF ARTIFICIAL INTELLIGENCE EVOLVED?

In 2018, the inaugural year of the IDFA DocLab/MIT ODL research partnership, the research focus was AI and authorship. Considering the surge in AI tools and experimentation that has occurred over the past year or so, it is timely to reflect on progress since the 2018 report and ask some new questions. So along with embodiment, we took an additional focus on how AI is being used among some of the prototypes, within the context of the above questions as well as more broadly. How are makers creating with AI, and what reflexive practices are apparent? How are makers imagining and critiquing worlds in which we co-habit with AI? And does AI have anything to offer in the realm of embodiment, or is this a peculiarly human endeavour?

## RESEARCH QUESTIONS

*How are makers considering and using embodiment, in conscious and subconscious ways, to deliver experiences?*

*Why are makers exploring embodiment, and does this connect directly with the representation of the real? What does it mean to represent reality in an experiential, embodied way?*

*What tools, techniques and technologies are makers using to create embodied experiences?*

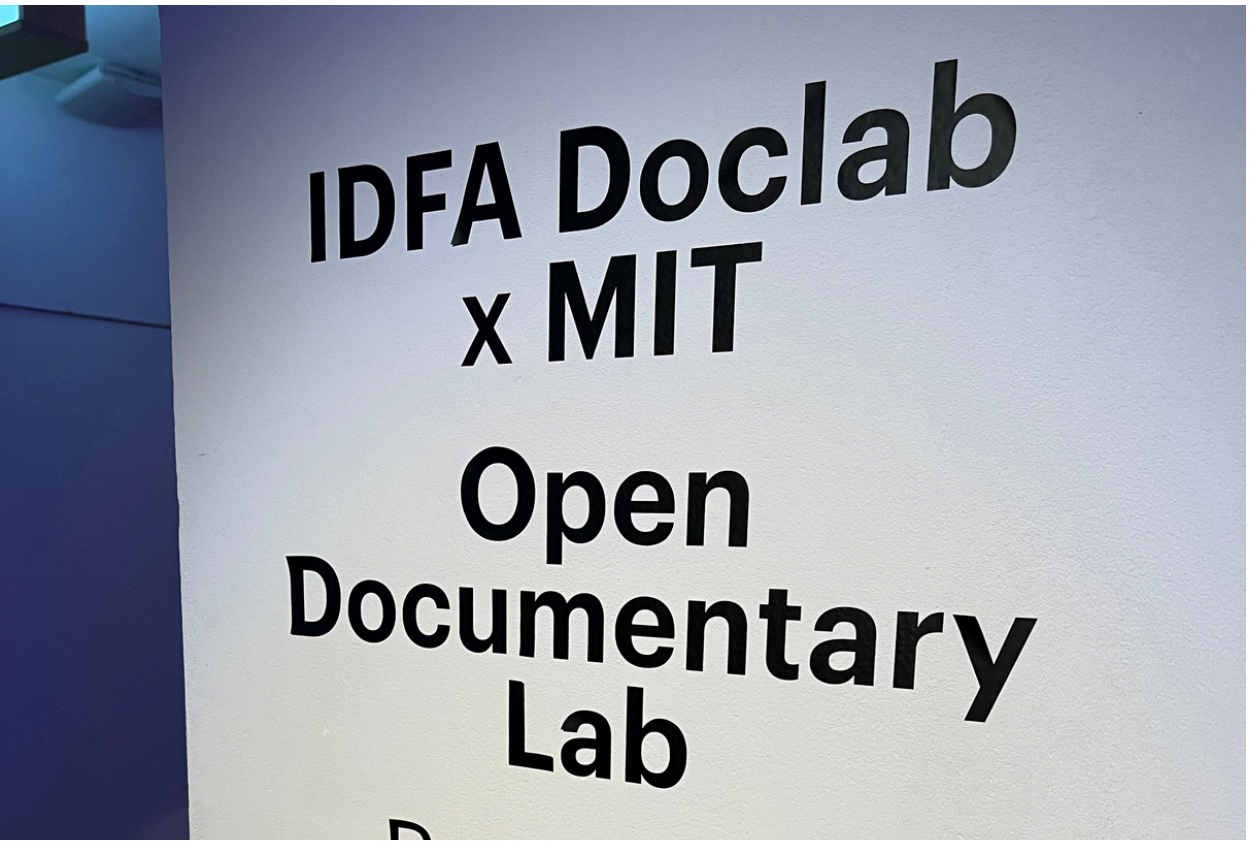
*How have these tools and techniques evolved in recent years, and are we categorising them in new ways?*

*How are audiences responding to projects that in big or small ways involve their bodies?*

*Do makers and audiences feel that new forms of knowledge are communicated through embodied interaction? How does embodied interaction impact upon the perception of reality/realities among audiences?*

*What role does discomfort have to play in embodied experiences? What is the difference between creatively intentional discomfort, and discomfort or awkwardness that arises unintentionally? (Or is there a difference?) And do they have different outcomes? (Discomfort here may mean physical, emotional or intellectual discomfort).*

*How are makers creating with AI, and what reflexive practices are apparent? How are makers imagining and critiquing worlds in which we co-habit with AI?*




MIT ODL hosted a research lounge at the 2023 DocLab festival, at which we conducted public artist conversations.

# METHODOLOGY

We selected nine projects on which to focus the research, listed below. Our methodology then consisted of three approaches:

- In-depth interviews with the artists in the lead up to the festival, and in some cases a brief follow up afterwards.

- The author's own reflections and analysis of undertaking the selected projects.

- An audience survey, delivered at the festival via QR codes displayed next to projects. The survey consisted primarily of Likert scales (asking respondents to indicate their level of agreement with various statements, such as "I felt bodily present in the experience", on a scale of 1-5). A team of student interns was tasked with assisting audience members to complete the survey. Across the projects, we received 70 completed surveys. Projects using VR headsets at the primary DocLab venue proved easier to elicit survey participation, as it was clear to the interns when a person had finished the project and could be approached for a survey. In contrast, some of the projects had less clear end points or were placed in different locations, and so obtained fewer survey responses. As a result, some of the data is shared for individual projects, while some is shared across the breadth of projects.


Artist conversation at DocLab 2023 between report author Julia Scott-Stevenson and co-creator of *Fresh Memories: The Look*, Volodymyr Kolbasa.

# SELECTED PROJECTS

***Shadowtime – Deniz Tortum & Sister Sylvester***

*Shadowtime* is an interactive VR narrative, in which Alma, a mysterious guide, leads participants through an examination of the double worlds of virtual reality, simulation theory, and the anthropocene. The project uses hand-tracking, and the participant progresses the story by grabbing and pulling the corner of a 3D cube.

***Traversing the Mist – Tung-Yen Chou***

*Traversing the Mist* is a room-scale interactive VR work for three participants. In a surreal gay sauna, participants inhabit a young man's body, navigating through the sauna and encountering other identical characters, considering notions of desire and longing.

***Voice in My Head – Lauren Lee McCarthy & Kyle McDonald***

*Voice In My Head* explores the potential for AI to listen and intervene in our social experience in real-time, augmenting our personality. Participants are given bluetooth earphones and a smartphone, and asked a series of questions about their internal monologue. An AI assistant, trained on the participant's voice through this first interaction, then offers audio support in the voice of the participant as the participant re-enters the physical world.

***Turbulence: Jamais Vu – Ben Joseph Andrews & Emma Roberts***

*Turbulence: Jamais Vu* is a mixed reality work using a VR headset and passthrough camera, exploring the lived experience of disabled XR artist Ben Joseph Andrews. Guided by Andrews' voiceover, participants are invited to manipulate objects on a table as their perception is gradually and increasingly altered.

***Fresh Memories: The Look – Volodymyr Kolbasa & Ondřej Moravec***

*Fresh Memories: The Look*, a 360 degree live action VR work, uses the technique of direct gaze to establish a sense of presence. In it, scenes of destruction in Ukraine are visited – a bombed out classroom, a roof of an apartment building – and in each scene a local resident stands close to the camera, directing their gaze at the lens and holding it, without speaking.

***Emperor – Marion Burger & Ilan Cohen***

*Emperor* is an interactive VR narrative, telling the story of Burger's father who had a stroke and became aphasic. In a black and white illustration-style world, participants take the perspective of both the father and daughter, entering memories and undertaking physical tasks.

***(this conversation is) Off the Record – Nirit Peled***

*(this conversation is) Off the Record* is an immersive performative lecture that unveils an algorithmic reality from the use of risk assessment tools by the Dutch police. Grounded in real events, the project delves into the complexities of algorithmic systems employed to predict youth crime, and is accompanied by screens displaying pre-recorded motion captured dancers representing the affected youth.

***William Quail's Pyramid – Piotr Winiewicz & Constant Dullaart***

*William Quail's Pyramid* is an AI generated audio and screen-based work. Participants are given headphones to listen to AI generated gibberish as they walk a few blocks to a cinema. In the cinema, the AI-generated visuals then accompany the soundtrack, as audiences ascribe emotional value to content created by a machine.

***The Vivid Unknown – John Fitzgerald***

*The Vivid Unknown is an interactive video installation on three screens; a collective viewing experience that responds to the audience and advances through multiple playback states depending on the amount of viewers and their movements. The content is structured on the story arc of Godfrey Reggio's Koyaanisqatsi and based on a generative AI model trained on the Qatsi trilogy. The sound is an AI-generated reimagining of the original Philip Glass score that responds to the viewers' positions in the installation.*

# WHAT WE FOUND

Still image from *Emperor*, 2023.

# WHAT WE FOUND

Across the projects, audiences were aware of embodied approaches, and generally understood them as substantively different from flat screen delivery. In the audience survey, for every project, we asked: "Do you think that having bodily involvement or interaction changed how you experienced the project? Did it give you a different way of understanding the story or message from watching a media project on a flat screen?"

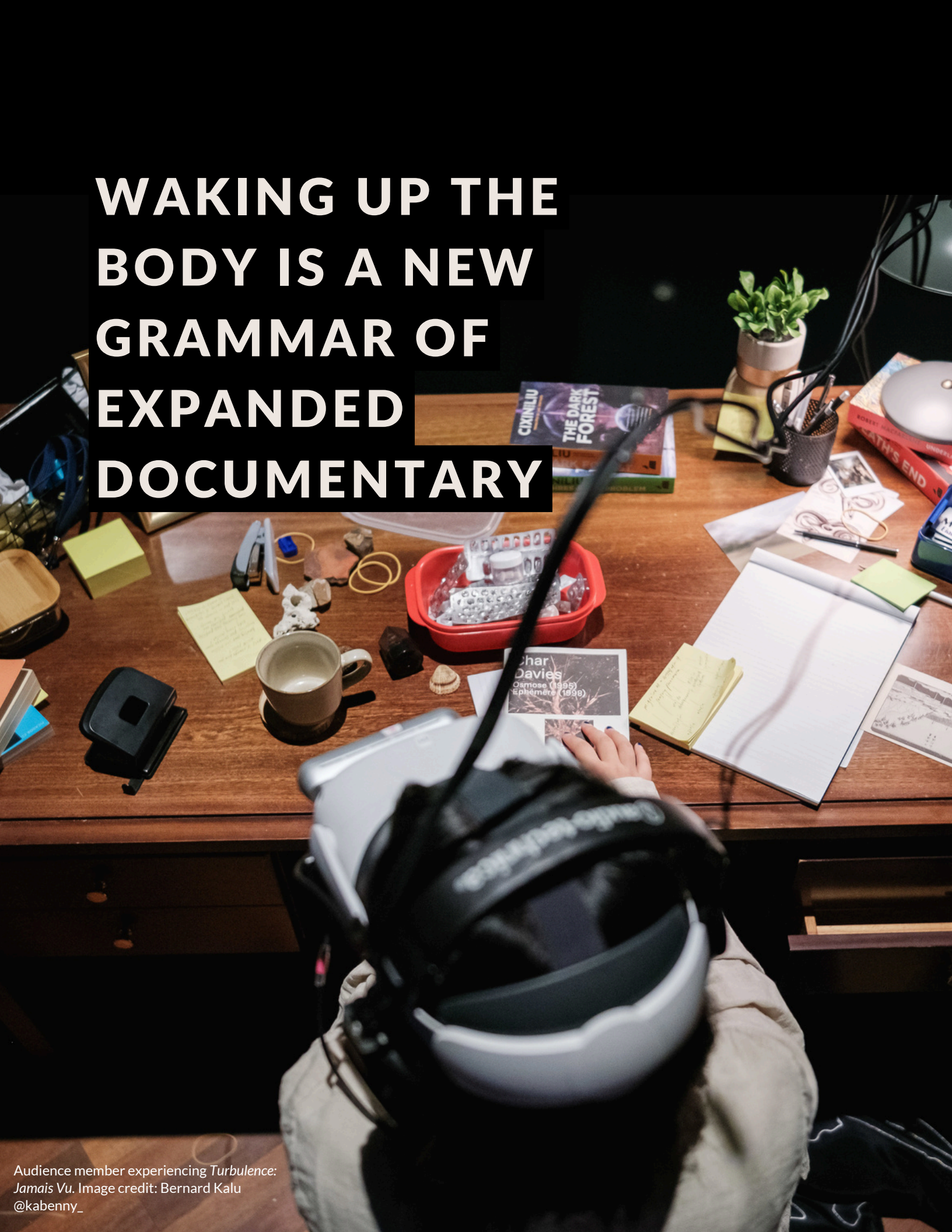
Combining responses across all projects, almost 90% of respondents said yes. Respondents were invited to expand upon their answer, and here is what some people said:

- 'A flat screen would be poetic storytelling. The headset version is poetic storyliving.' (*Emperor*)
- 'I could shift perspectives.' (*Emperor*)
- 'I felt like I was in the space with the person in the experience.' (*Fresh Memories: The Look*)
- 'It made my actions feel consequential, and my connection to the story and the narrator more personal.' (*Shadowtime*)
- 'I felt in wonder of my OWN body doing the things it does in the normal world.' (*Turbulence – original emphasis*)
- 'I can interact with partners in the virtual world.' (*Traversing the Mist*)

While it was not specifically the focus of the research, it is still worth noting that a significant number of people surveyed expressed a dislike for the physical experience of VR headsets.

In the following section we will present a series of takeaways from the research, using examples from the relevant projects to illustrate our findings.

# WAKING UP THE BODY IS A NEW GRAMMAR OF EXPANDED DOCUMENTARY




Audience member experiencing *Turbulence: Jamais Vu*. Image credit: Bernard Kalu @kabenny_

# 1.WAKING UP THE BODY IS A NEW GRAMMAR OF EXPANDED DOCUMENTARY

***Many artists are taking time early within their projects to gradually familiarise audiences with an embodied approach.***

Many of the projects we examined demonstrated a sophisticated understanding of how to lead an audience physically into an experience, in ways that would set the participant up to better interact and understand. Distinct from onboarding, in which a participant is prepared for a project before it begins, this familiarisation process occurs *within* the project itself. This process is also a way of building a grammar of embodiment within the genre; like an interactive version of an establishing shot, the artists are introducing the audience gently to the world the story exists within, and inviting them to test out its features.

In ***Shadowtime*** (VR), the introduction invites the participant to look up, look down, look left, and so on. Deniz Tortum, one of the project creators along with Sister Sylvester, says, "It's almost like [developing] this awareness of neck muscles in the beginning of the piece", gently awakening the participant's awareness of the ability to look around by moving their whole head. Then, a set of virtual hands are projected atop one's own hands (which can be seen in passthrough at this point), leading to a very strange feeling of self-perception (for the report author). This is the '*shadowtime*' at the heart of the piece – the dual reality, which we'll discuss further below.

In ***Emperor*** (VR), the first request made of the participant is to point to the door representing the language they speak – to select the French or English version of the project. Handtracking means that the participant can simply point with a finger (i.e. without holding a controller), and it introduces the form of interaction that will be used throughout. (This moment also acts as a canny piece of data gathering by the makers – the project notes which hand is used to point here, assumes it is the dominant hand, and preferences the non-dominant hand from then on as a way to approximate some of the movement difficulties faced by Burger's father). Throughout *Emperor*, the demands on the audience gradually increase – simpler tasks occur earlier (pointing, grabbing), and increase in complexity as the story progresses (such as tracing letters on a flat surface).

***Turbulence: Jamais Vu*** (VR) also requires the participant to undertake tasks with their hands, which in this case can be seen using a form of passthrough – a camera is mounted on the headset, and the image fed to the viewer is a manipulated version of reality that is rendered in black and white outlines. In voiceover, co-creator Ben Joseph Andrews first calls on the participant to feel their feet on the floor, and invites them to return to noticing that sensation if they feel unstable at any point. The camera feed that the participant sees is reversed – so when they reach out their left hand, it is the hand seen on the right that moves. Again, tasks increase in complexity gradually, on the one hand showing care for the audience while also encouraging an increasing sense of uncertainty to elicit understanding of the concept of vestibular migraine and the accompanying sensations of derealisation and depersonalisation.

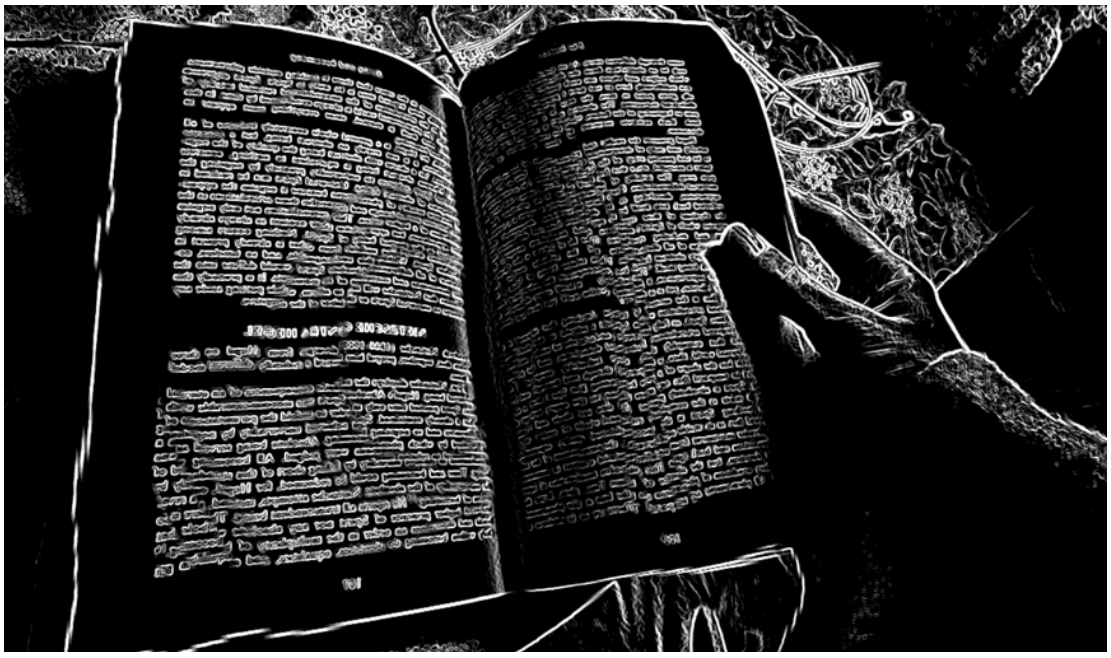
In ***Traversing the Mist*** (room scale VR, three participants), participants each have an identical virtually rendered body of an Asian man, and can look down and observe this body. Participants enter the virtual space in a sauna locker room, with a narrow passage between the virtual lockers. Immediately there is a sense of constriction, as if one's elbows might brush the lockers. A paper by Slater et al (2018) found that allowing time early in a virtual experience to develop a feeling of embodiment led to increased sense of presence, for example by providing a virtual mirror in which to consider one's virtual body and observe it moving.[5]This technique is used in *Traversing the Mist*, where participants can observe their virtual bodies in a mirror in an elevator, and can also look down at their virtual body in the space where their own body should be.

Still image from *Traversing the Mist*, 2023

5 Slater, M., Navarro, X., Valenzuela, J., Oliva, R., Beacco, A., Thorn, J., & Watson, Z. (2018). Virtually Being Lenin Enhances Presence and Engagement in a Scene From the Russian Revolution. *Frontiers in Robotics and AI*, 5:91. https://doi.org/10.3389/frobt.2018.00091

This gradual introduction is most obvious in headset-based projects, but also visible in other formats. For instance, ***Voice in my Head*** begins with the participant seated in a small sound booth – protected from the full impact of the outside world while they familiarise themselves with the earpiece and phone screen, and speak their responses to train the voice.

Each of these projects eases participants into the storyworld, allowing them time to familiarise themselves with its parameters, structure and interactions, before increasing the complexity of interaction or the intensity of the story. Ilan Cohen, one of the makers of *Emperor*, spoke about the importance of gradually introducing interactivity while also setting up the world of the piece – "what we wanted to do is at first immediately give something physical to do; just to kind of lay out the ground rules that this is going to be interactive and also get people used to the hand tracking, but also just deliver some fun right off the bat." A persistent tension in expanded documentary is that between the desire to let a story flow, and the need to offer instruction in forms of interactivity. In stories such as those examined here, artists are building the instruction into the story itself, and in doing so are expanding the grammar of embodied interaction among the audience. It seems, though, that this familiarisation is particular to each project, and must be undertaken to at least some extent each time a new project is developed. In other words, it is a feature of the expanded form, as each artist creates a set of practices with each new project.



Still image from *Turbulence: Jamais Vu*, 2023

# EMBODIED EXPERIENCES OFFER PRODUCTIVE CHALLENGES TO AUDIENCES

Co-creator Emma Roberts presenting *Turbulence: Jamais Vu* at the IDFA DocLab Summit, 2023. Image credit: Bernard Kalu

# 2. EMBODIED EXPERIENCES OFFER PRODUCTIVE CHALLENGES TO AUDIENCES

***A sense of embodiment presents several challenges to audiences – it challenges perception and focus, and is a useful strategy for eliciting creative discomfort. Discomfort also provokes a consideration of technology.***

Documentary film has a long history of challenging audiences. This might occur through presenting new, alternative or contentious perspectives, or through experimenting with form and how it can illuminate or destabilise reality. This instinct is carried through to the immersive field. Once participants are familiarised with the space and world of the project, makers can begin to push the audience with the complexity, perspective or intensity of embodied interaction. ***Turbulence: Jamais Vu*** increases the difficulty of the tasks for the audience (reach for a mug and move it, pick up and open a small bottle), while also slowly increasing the manipulation of the image, so perception becomes even more strained. In ***Emperor***, tasks move from picking things up to attempting to trace letters, yet the letters stubbornly insist on turning out differently, as a way of simulating the experience of Burger's father. Participants in *Emperor* also shift from the role of Burger's father to Burger herself, challenging their perceptual positioning.

Embodiment can also affect focus – as the challenging nature of tasks increases, the audience is less likely to pay attention to other inputs. Cohen and Burger noted that in *Emperor*, participants ceased following voiceover instructions while they were focusing on a task. Similarly in undertaking *Turbulence*, the researchers noted it became harder to attend to Andrews' voiceover while attempting a difficult reaching task, and in ***Voice in My Head*** we noted it was difficult to simultaneously pay attention to the voice in the earphone while talking to a person in the outside world.

Burger explained that while testing and exhibiting *Emperor*, they found, "something like 30% of people actually use their ears as a guiding tool. The rest really don't. A lot of people are not listening … maybe just because people are very visual. We realize a lot of people really just kind of shut off their ears. They're hearing words, but they're not listening for clues…unless you tell them specifically to listen for clues, which is something we've started to do when mediating early on as we onboard people."

This is something that has long been understood by creators of immersive audio projects, in which it is common to hear an introduction that reminds participants that although they are inhabiting an audio-first story world, they are still subject to the physics of the 'real' world and need to pay attention when, say, crossing the road. This, for example, was part of the on-boarding for ***William Quail's Pyramid***, as audiences were given headphones playing AI-generated gibberish, to listen to while walking a few blocks to the cinema screen.

## DISCOMFORT

The challenge offered by creators to audiences can often extend into a sense of discomfort. Makers within documentary and further across artistic fields can aim to unsettle and provoke audiences, as a route to generating surprise, awareness or understanding. This challenge can contradict mainstream understandings of technology, in which efficiency and a smoothness of experience is prioritised. Here, however, we see a rich vein for exploration, in which user expectations of smooth interaction can be upended in intentional challenges. **It might be in this intersection between discomfort with technology and challenges to perspective that XR documentary is finding its purpose.** We asked makers and audiences about discomfort, and both groups reported a fairly sophisticated understanding of its creative uses.


Still image from *Shadowtime*, 2023

The creators of ***Emperor***, Cohen and Burger, thought carefully about how much to challenge their audience. They were helped by a theme in which frustration was a large part of the story they wanted to communicate. Cohen says, “Artistically, I'm a big fan of discovery. I'm a big fan of being challenged, because again, it's all about making the audience work … I don't enjoy art that makes me completely passive … I like to be engaged in some way or another. There's obviously limits to this. There's uncomfortable movies that push the idea too far, and then it takes you out of the experience, because you see the intention and get a little angry at the creator. But obviously, there's a range to discomfort in this case.” Cohen also shared that he and Burger would have liked to include greater interactivity in the project, however, they found that in such a narrative driven structure, there was a clear limit on how much they could encourage interaction. They were also conscious of attending to diverse levels of experience with VR among audiences. It may be that as audiences become more familiar with this emerging grammar of embodiment, greater levels of interactivity will become possible.

Still image from *Emperor*, 2023.

Cohen and Burger were also fascinated to observe that visible representations of frustration in participants did not necessarily mean a person was frustrated with the project. Cohen says, “We did see a few people really, physically hate being in that space. I remember this guy, his gestures were so angry. And I thought, Oh, wow! He's going to take off the headset, he's going to want to kill us. And he came out of there, and he loved it. It moved him tremendously… he just wanted out, but he was also engaging with the material in a profound way. That was a really interesting contrast, I didn't think that would be possible to that level.” The makers also found that some people would express their frustrations afterwards and then realise, through the process of explaining their frustration, that it was an intentional part of the project.

In the audience survey for *Emperor*, audiences were fairly clear on the distinction between mental and physical discomfort, acknowledging that while mental discomfort was likely intended by the makers, any physical discomfort was usually an unintended consequence of the equipment or technology (open text comments generally referred to headset discomfort or nausea). Overall, 16 out of 26 respondents (62%) agreed or strongly agreed with the statement, “I felt like the discomfort assisted in my understanding or appreciation of the message of the project”. When asked to expand on their emotional response to *Emperor*, one participant said, “It was new. I felt chaotic and frustrated sometimes. It was hard to do what I wanted to do. I think this is what I was meant to feel during this experience.”

In ***Fresh Memories: The Look*** (360° live action VR), the technique of direct gaze of the filmed subjects is used to both generate a sense of presence and to challenge the audience. This technique differs from direct gaze in flat screen media as participants are within a fully encompassing 360° environment, designed to elicit the sense that they are present in the same space as the subject. The participants felt confronted by the content, and particularly the sensation of a Ukrainian person staring directly at them from within scenes of destruction. One participant said, “The people were so close and some of the locations made me have a strong emotional reaction and [it was] uncomfortable in the way that I felt awful for Ukraine and no one should have to deal with those terrible experiences.” Another said, “I felt like I was in the space with the person in the experience. Had trouble looking away from them because I felt like I need to make eye contact otherwise I’m ignoring them.”

Still image from *Fresh Memories: The Look*, 2023.

The creators of *Fresh Memories: The Look* reported observing strong emotional responses of participants when showing the project at a number of events. Ondrej Moravec said, "Some people were really emotional, so it was actually really part of my job [at festival events], just to talk to people afterwards because they wanted to talk. They wanted to share. They wanted to give a hug. And some people went the other way … they needed some space afterwards, so they would take the headset off and look … for some space to sit and digest it a bit."

A study by Steed et al (2018) found gaze was a simple strategy that could increase the sense of presence in an audience.[6] While in *Fresh Memories* the reports of presence were not particularly high, the emotional impact was still significant (8 out of 9 respondents agreed or strongly agreed that they had an emotional response). Six of the nine respondents agreed that the project gave them a different way of understanding the content from an approach that delivered content on a flat screen.

6 Steed, A., Pan, Y., Watson, Z., & Slater, M. (2018). "We Wait"—The Impact of Character Responsiveness and Self Embodiment on Presence and Interest in an Immersive News Experience. *Frontiers in Robotics and AI*, 5. https://doi.org/10.3389/frobt.2018.00112

Emma Roberts, one of the creators of *Turbulence*, talked about their intention to represent "disability as a seamed experience of the world." She continued, "I think virtual reality strives for seamlessness a lot of the time … and it's a fantasy, because, of course, there's always seams there." So *Turbulence* presented an opportunity to explore the creative and communicative potential of bumps and glitches. Glitches, in fact, is where Roberts and Andrews found the idea for the project. Roberts said, "Where this whole project came about was the weird embodiments that get created when VR goes wrong, when immersive tech goes wrong and your hands stretch kilometers into the distance, or you know, your head goes a bit strange. And that was the closest thing that Ben had to explaining what it actually felt like to have some of these symptoms of his condition." Andrews added, "we're kind of reclaiming the space of glitch as a space for disabled expression within embodied immersive technologies."

This did, however, open up the difficulty of how to meet a broad audience: "The conceit of the piece [is] it being about deliberately disorienting you in space, but still having to accommodate for people who want to be very exploratory, and people who who just want to be safe and still." Cohen and Burger with *Emperor* also found a lot of the work was in finessing the level of difficulty of interaction to accommodate a broad audience. In *Turbulence*, audiences generally understood the relevance of the intended discomfort – nine out of 12 (75%) agreed that the discomfort assisted in their understanding of the project. One respondent said, "The reversals [of the image] were awesome and discombobulating." It is interesting to consider that future projects may develop features in which makers can dial up or down the level of intensity or difficulty for different audiences.

In ***Shadowtime***, co-creator Tortum said that intellectual discomfort was at the heart of the piece, as it also was for the short film *Our Ark* that was a precursor to *Shadowtime*. *Shadowtime* was created as a response to techno-solutionist narratives of virtuality as saviour. Co-creator Sister Sylvester said, "it starts to connect to this slightly tantalising and similarly terrifying narrative, the kind of thing that comes out of the Palmer Luckeys of the world – that we could actually start moving into that [virtual] space because we can fix that space and we then we don't need to fix our reality." The virtual character in *Shadowtime*, Alma, plays the role of guide, welcoming the participant into this tech-utopia, but soon a sense of unease is apparent.

The morphing virtual worlds in the piece created by AI, and the looming, ominous cult-like virtual characters in the final scene all serve to engender a feeling that perhaps this world is not what it claims to be.

Tortum did note, however, that it was difficult to build the unsettling nature of the message in a way that was subtle yet convincing. Showing the work prior to DocLab at Venice Immersive, they found that viewers would find that it reinforced whatever their views already were – "if people had their own critique of the medium [beforehand], they would come out with that. If they were very optimistic about the medium, they would come out with that." So they added a couple of extra lines in the narration to give more context and shape the tone further. "We wanted to put more seeds of doubt in the mind," said Tortum. At IDFA, while the audience survey only received five responses for *Shadowtime*, four of the five agreed that the discomfort assisted in their understanding of the message, while the fifth selected 'neutral or unsure'.

So while on the one hand, audiences in general seem to understand frustration and discomfort, it depends how explicitly it relates to the message of the project. In *Turbulence* and *Emperor*, the discomfort was both embodied and an overt element of the topic. In *Shadowtime*, which built a more speculative world, the creators had to work harder to demonstrate that the conceptual sense of unease was intended to provoke.

Still image from *Shadowtime*, 2023.

In contrast, in ***Traversing the Mist***, creator Tung-Yen Chou says he never sets out to intentionally make people uncomfortable. He does acknowledge that the content (gay sex in a sauna) may elicit some discomfort, saying, "even the most queer friendly people might not feel super comfortable being in the work, so the subject itself already sets a certain discomfort." Yen says that while he's not intentionally creating discomfort, he likens the feeling in the project to a general awkwardness that people experience every day, such as when in an elevator with strangers. Yen instead says he is striving for a sense of curiosity; "I'm sharing an emotion, a sense of searching, longing for something." Audiences in *Traversing the Mist* were quite mixed on whether they felt discomfort; it may be that a sense of anonymity provided by a headset and identical avatars enables the participants' curiosity to drive them to explore beyond any awkwardness.

The everyday sense of social awkwardness is also present in ***Voice in my Head***, as the participant needs to navigate general social interactions while also listening to a voice in an earpiece. Lauren McCarthy, project co-creator, says, "I think often the discomfort means that we're having a moment of awareness. We're not on autopilot. We feel very aware of ourselves as individuals in a situation that we are navigating. I think if that can be done in a way where there's care and support, then the discomfort can be really productive."

In *Voice in my Head*, there is a moment of surprise and recognition when the voice assistant first begins speaking in the participant's own voice. The project offers up an immediate challenge to the participant's sense of self – what does it mean for one's identity if a computer is speaking to us in our own voice? The participant is also prompted with some personal questions around their internal monologue, and so the potential for discomfort comes at a number of levels, including conceptual and physical. How confident am I? What am I lacking? How do I feel about an AI system replicating my voice and inner narrative? And how do I navigate these questions as well as navigate the social physical world? McCarthy found considerable creative depth in the embodied interaction with these questions, as she said it "emphasized the tension between the digital and the physical, the internal and the external, as participants became acutely aware of their own bodies and behaviors in relation to the AI's influence."

# EMBODIED EXPERIENCES HIGHLIGHT LAYERED REALITIES

*Traversing the Mist* at IDFA DocLab, 2023. Image credit: Bernard Kalu @kabenny_

# 3. EMBODIED EXPERIENCES HIGHLIGHT LAYERED REALITIES

***Artists are moving beyond the aspiration to offer participants an experience of 'walking in another's shoes', to recognise and highlight the slippages between realities offered by creative technologies.***

Deniz Tortum, co-creator of ***Shadowtime*** says, "being in VR is like being in two places at the same time. You're both in the virtual world, but you're also very much still based in the physical world. And you're aware of both those spaces." Sister Sylvester, the other co-creator of *Shadowtime*, says, "They are interactive. They affect each other, they have direct impact on each other, and [so] how do we learn to be in those two worlds at the same time?"

The immersive and interactive projects that we have examined are tending to move away from some of the early claims of VR that a viewer is fully inhabiting a virtual world, and are instead playing with slippages between differing realities in sophisticated ways.[7] There is a broader recognition of the dual realities in play in such projects, and rather than doubling down on attempts to fully immerse participants, many creators are leaning into these dual realities, through both the content or stories they deliver, and through the texture of the experience created.

***Voice in My Head*** delivers a layered experience in which the participant listens to an AI generated voice via an earpiece, while moving through the physical world and interacting otherwise as usual. In ***Emperor***, the participant's point of view switches occasionally between the role of the co-creator, Marion Burger, and her father, as they undertake tasks or interact with each other. In ***Turbulence***: ***Jamais Vu***, the dual reality presented is the story of Ben Joseph Andrews, project co-creator, and his experience of vestibular migraine described in voiceover, while the participant also undertakes perception-based tasks that craft a personal experience.

7 These projects are generally distinct from those with a social intent, such as experiences through VRChat for instance, in which the feeling of inhabiting a virtual space via an avatar is more of a focus.

The creators of *Turbulence* were aiming to present the experience of Andrews, while also shifting the audience's perspectives on how they themselves perceive the world more broadly. Andrews said, "what was really important with this project was that you're not seeing an avatar or a character of yourself and your surroundings. You're seeing your physical self and your physical surroundings, but made strange, kind of made virtual … it's upsetting the habituated and the familiar ways of navigating space and being inside your own body." Emma Roberts, co-creator of the work, also pointed out that they wanted to reframe the narrative away from the idea of vestibular migraine as a deficit, but as something that offers a different understanding (while acknowledging its unsettling and difficult experience for many). Andrews said, "it opens up some really interesting questions and provocations around the way that we perceive the way that we know ourselves … our perception isn't some continuous stable thing, but it's fragile and tenuous and prone to change at any moment."

Our perception isn't some continuous stable thing, but it's fragile and tenuous and prone to change at any moment."

In the early stage of third wave VR, around the mid 2010s, there was a period of hype around the concept of 'walking in another's shoes', an at times simplistic suggestion that virtual space and interaction can allow a participant to inhabit (and empathise with) the experience of another. As this framing has been increasingly critiqued, we are seeing artists challenge it further and add greater complexity to the offered POV. *Turbulence*, for instance, expands the approach by allowing participants to explore a shifted perspective of their own, rather than specifically asking them to embody Andrews. For the audience survey on *Turbulence*, two thirds of respondents (8 of 12) agreed or strongly agreed with the statement: 'This project has heightened my awareness of how I perceive and interact with the world' (the other 4 were neutral or unsure, none disagreed). Similarly in *Emperor*, opportunities to embody the father's experience are couched in a broader narrative that includes his daughter Marion's perspective as well as journeys through time and memory.

***Traversing the Mist***, too, invites a sophisticated layering of experience. Three participants at a time enter the room-scale virtual reality experience, and all are represented in the virtual world by identical virtual Asian men (created using MetaHuman). The existence of three identical characters in the space acts to reduce the sensation that it is one singular person's experience that is being conveyed, and the participants can comfortably inhabit a character and themselves simultaneously. Creator Tung-Yen Chou speaks about this dual inhabiting – "It's always this kind of half drunk situation like you are half there, you're conscious, you know you are now in the [exhibition venue] … You know you have a headset. But then the story's so good, or the story is so intriguing that you almost forget. But then you'll have a lot of internal dialogue with yourself like, 'who am I?' Because 'who am I?' is such a big question for the VR viewer. And then the first question for the director to answer: 'Who are they?'" This question becomes richer when the answer can be more than one thing, and indeed when different participants can have different answers.

While there were only six responses on the audience survey for *Traversing the Mist*, they expressed a range of experiences of differing realities. Five of the six said they felt that their whole body was present in the world of the experience, while three (so at least some of the same people) said their body was 'somewhere else' while their mind was in the experience, perhaps expressing a shifting state of bodily awareness. In terms of character role, four respondents said they were acting as both themselves and another character.

Still image from *Traversing the Mist*, 2023.

The author beginning *Voice in My Head* in the soundbooth at IDFA DocLab, 2023.

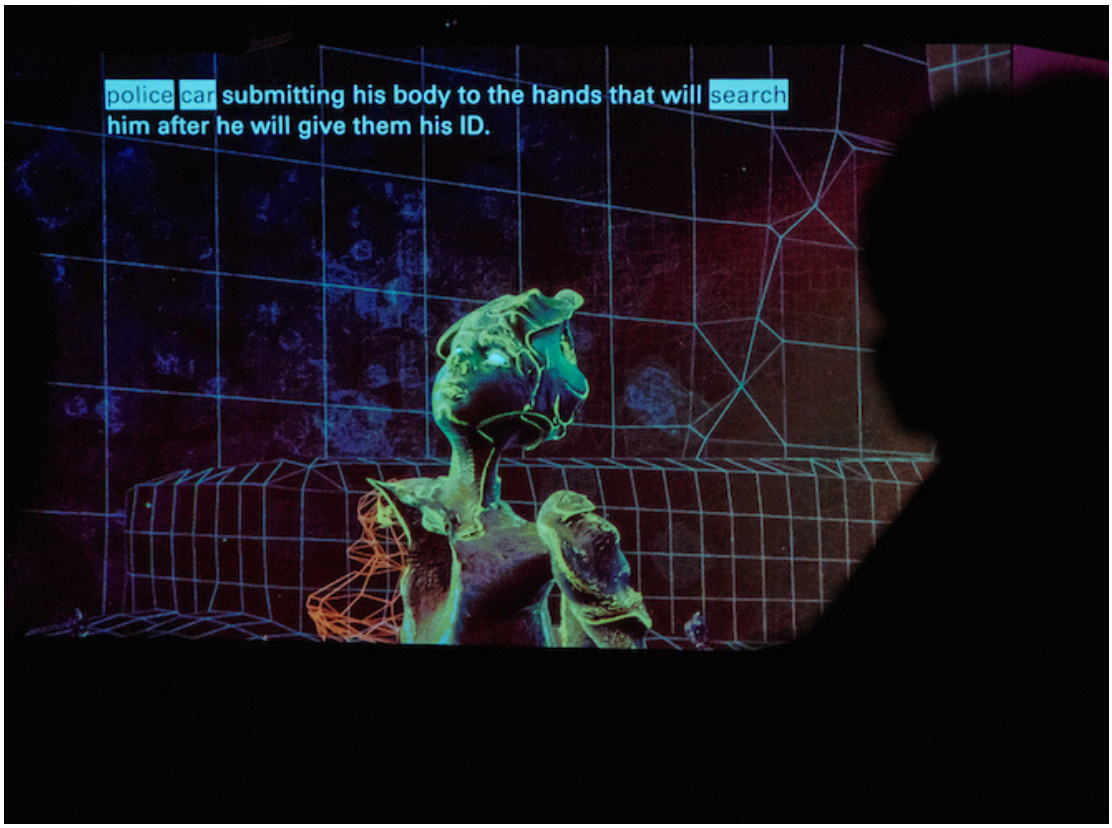

***Shadowtime*** brings this duality of experience to the heart of the piece. The title refers to another kind of dual reality – that of living through climate crisis. Tortum credits the artist collective the Bureau of Linguistic Reality with coining the term 'shadowtime'. He describes it: "A feeling that is being in two times at the same time, like making breakfast in the morning, but also having the anxiety of 30 or 40 years later [of climate impact], and kind of experiencing those two times at the same time, and then [for this project] trying to adapt it to VR." Environmental humanities scholars have identified this feeling, for instance Lesley Head talks about the 'double reality' of accepting that climate change is occurring yet continuing to live life as before.[8] To repeat Sister Sylvester's comment above, "How do we learn to be in those two worlds at the same time?" The same question can be asked of both virtual/physical space, and of daily life/climate crisis. **Perhaps enabling a complex understanding of dual realities through immersive experience might better allow participants to bring back new knowledge to their day-to-day reality,** rather than feeling like they are leaving a discrete world behind and going 'back to normal'. Might slippage between realities in a virtual sense support deeper awareness of parallel existence in the face of climate crisis, or indeed other issues?

***(this conversation is) Off the Record*** also asks the audience to inhabit multiple realities. A performance lecture by creator Nirit Peled, it includes screens showing pre-recorded motion-captured avatars representing the young men targeted by algorithmic policing, and live actors representing the police and government workers. It invites audiences to consider not just the affected individuals' experiences, but to also see the broader issues at play, and how these might affect even themselves. Peled says she was aiming to shape an 'algorithmic reality' for the audience to grasp, a space in which data is used by institutions to create pictures of people based on problematic assumptions. She notes that in mainstream media, the young men who are profiled by these algorithms are largely absent, as they are hard to reach and often do not want to be reached. Bringing the young people into the story via movement was a different way of allowing them to take up space and push back on the accepted narrative.

8 Head, L. (2020). Transformative change requires resisting a new normal. *Nature Climate Change*, 10(3), 173–174. https://doi.org/10.1038/s41558-020-0712-5

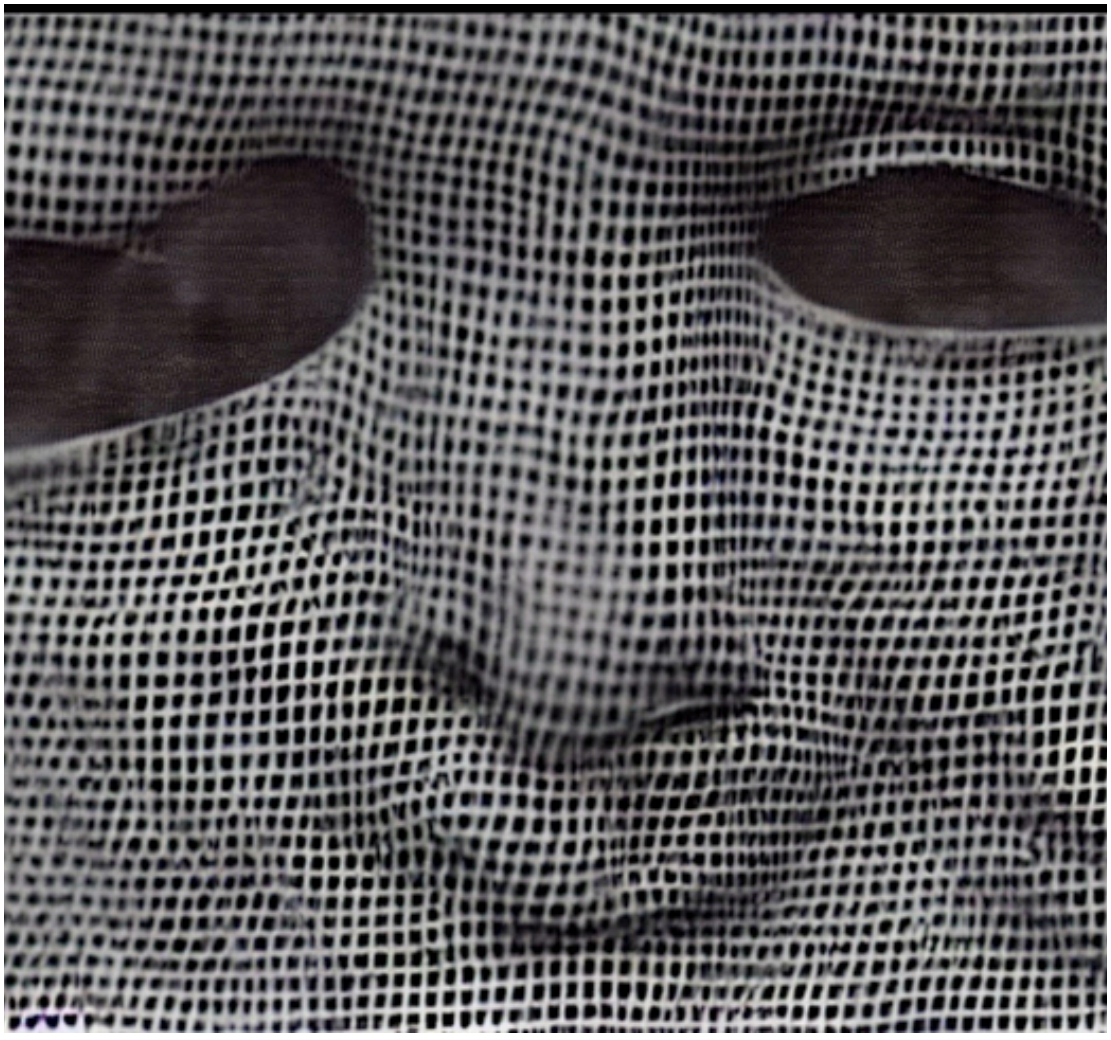
Peled was also building a speculative reality; she says that new media and virtual space invite speculation, even though this extends beyond a journalistic representation of facts. Indeed, as the algorithmic policing model speculates, so too does the project in response. Peled says that using avatars in particular allows a kind of imagining, one that enables the speculation to extend to the experience of specific others and ourselves. Further, the format of a performance lecture enables her to surprise the audience – "[a performance lecture involves] the artists talking, which immediately creates confusion, because the artist is not normally talking." Peled also grounds the audience in their physical reality by providing each audience member with a printed book, containing annotated copies of many of the official documents relating to the policing program.

Peled said, "I hope it's immersive in a way that you feel like maybe those kids are sitting next to me now, or that you kind of understand that you are also a data set … It's like, what's the difference between your lived experience and the data that is collected on you? I hope that immersiveness results in this kind of embodiment of this understanding that you are – your data is participating right now in something."




A recorded motion-captured dancer on screen at *(this conversation is) Off the Record*, 2023. Image credit: Bernard Kalu @kabenny_

***William Quail's Pyramid*** also offers audiences a multi-layered experience, as audiences listen to the AI-generated audio via headphones as they walk to the cinema. One of the creators, Piotr Winiewicz, said that they wanted audiences to experience the gibberish audio on its own first, before they added the subtitles and the visuals. He found the audio so compelling when they made the first samples that he began listening to it even when going to the gym, and wanted audiences to experience the same weirdness of their ordinary experience heightened with the added soundtrack. One of the survey respondents said, "Walking the city to arrive at the venue involved my body but also made my body separate from its surroundings. Those of us [in] headphones forming an oblivious bubble, accessing something from beneath the veil." This introduction of the AI audio while audiences are still moving through the physical world creates a permeable media conduit into the experience, and also can serve as a familiarising of the body, as observed in takeaway number one.



Still image from *William Quail's Pyramid*, 2023.


*Traversing the Mist* at IDFA DocLab, 2023. Image credit: Bernard Kalu @kabenny_

# 4. AUDIENCES ARE COMFORTABLE MOVING BETWEEN THESE LAYERED REALITIES

***Survey results demonstrate that audiences understand there are multiple perceptual layers to stories and are comfortable travelling between them.***

The audiences surveyed expressed a range of diverse opinions across the sensations of experiencing multiple realities, both within and across the projects studied. Many of these differences could be in part accounted for by people having different ways of articulating or conceptualising their experience, but it is also interesting to note a generally broad engagement with shifting perspectives.

Across 26 survey respondents on ***Emperor***, for a question on embodiment (in which more than one response was possible), just under a quarter felt that their whole body was present, while the same amount felt that they were mostly observing the project with their eyes and ears. Just over half (54%) felt that the physical interaction brought them more into the experience. In another question on what role the audience believed they held, just under half (42%) said they felt that they were both themselves and another character, and just under a quarter (23%) said they felt they inhabited multiple roles or perspectives throughout.

In ***Turbulence***, only two respondents of 12 (17%) said they felt like their whole body was present in the experience, but 50% felt they were an active participant and 50% also said the physical interaction brought them more into the experience. Only one respondent said they experienced the project with their eyes and ears only. On the role the participants played, eight (67%) said they were a participant acting as themselves, four (33%) felt like both themselves and another character, and two inhabited multiple roles or perspectives. Moving on to what the participants would take away from the experience, two thirds agreed or strongly agreed with the statement: 'This project has heightened my awareness of how I perceive and interact with the world' (the final third were neutral or unsure). One participant wrote, "I felt in wonder of my OWN body doing the things it does in the normal world" (existing emphasis).

The audience results seem to express that broadly, audiences are comfortable with shifting or multiple perspectives, and comfortable with a level of uncertainty around this. Makers can feel confident in experimenting with perspective, in leaving some questions of audience role unanswered, and in using this uncertainty to interrogate realities. Additionally, there was overwhelming agreement across all of the projects that embodied engagement changed how they experienced the work – 88% agreed that they found the projects delivered a different form of understanding from watching a project on a flat screen.

Makers can feel confident in experimenting with perspective, in leaving some questions of audience role unanswered, and in using this uncertainty to interrogate realities.

Participants undertaking *Shadowtime* at IDFA DocLab 2023. Image credit: Julia Scott-Stevenson

# DOCUMENTARY IS AN IDEAL GENRE FOR ADDRESSING AND PLAYING WITH ARTIFICIAL INTELLIGENCE

*The Vivid Unknown* at IDFA DocLab, 2023.
Image credit: Bernard Kalu @kabenny_

# 5. DOCUMENTARY IS AN IDEAL GENRE FOR ADDRESSING AND PLAYING WITH ARTIFICIAL INTELLIGENCE

***Projects continue to push beyond the 'critique-or-embrace' binary, finding nuance in big questions around AI. Makers are reflexively using the tools to interrogate the concepts, using audience bodies as a site of engagement, and also finding benefits to the technologies even amongst strong critique.***

Several of the projects at DocLab used AI in their development or concept, and we wanted to explore how the relevant practices had evolved since last examining this in 2018. In 2018 the research questions were around audience understanding of the real, and most of the examined works explored the idea of AI more than they actually used the technology. In 2023, however, it was the reverse, with projects incorporating AI as a tool at times without necessarily highlighting its use. ***Shadowtime***, for instance, used generative AI to create rapidly morphing 3D worlds, and Tortum noted that often audiences did not appear to notice the use of AI (AI does connect with the techno-utopian themes of the project broadly, but is not explicitly mentioned). Consistent with findings from the 2018 research, though, this study also found that artists are moving "beyond the familiar critique-or-embrace binary,"[9] and exploring shades of grey. This speaks to the importance of artistic responses broadly to hot-button issues, and to the space of documentary as one that allows nuance and welcomes competing perspectives to sit alongside one another.

In ***Voice in my Head***, co-creators Lauren Lee McCarthy and Kyle McDonald wanted to explore the question, "What if our consciousness, our inner monologue was just completely replaced by AI?" The participant is given an earphone and a smartphone, and begins in a small soundproof booth where they are asked a range of questions by an AI voice assistant about how they would like their inner monologue to sound. In responding, the participant is training the AI with the content of their responses and also with their voice, and soon the AI is speaking to the participant in a synthetic version of their own voice.

9 Uricchio, W. (2019), "Interrogating AI Through Audience Interaction", *Immerse*, Nov 21, https://immerse.news/interrogating-ai-through-audience-interaction-608403518471

The 2018 study found that socially situating AI interactions (through dinners, or interactive performances for instance), enabled embodied insights into AI. By contrast, embodied insights in this study were revealed through direct interaction with the technology. McCarthy said, "We tend to think of AI tools as something very digital and separate from our human bodies and flesh but the human experience is an embodied one. By having our software run on your phone and then speak to you through an airpod in your ear, it's really trying to work with the sensory experience of being a person. There's a real physicality to experiencing a work as sound, especially spoken directly into your ear. It's very intimate and it's very bodily. And then if you choose to act on that voice or to speak yourself, then the data that's being inserted into your consciousness through listening is further embodied through your voice or your actions."

Similarly, in ***The Vivid Unknown***, a generative AI screen work which was trained on the 1982 Godfrey Reggio film *Koyaanisqatsi*, audiences could move around the space in front of the screens, and their movement, gaze and numbers would alter or intensify the visuals on screen. However, while there is a relationship between number of participants and intensity or speed of the media, the participants are less aware of their direct impact on the project as it plays. This is perhaps more similar in audience experience to the projects from 2018, where impact on the project is in part uncertain. A key difference here though is in sheer computing power – the AI systems that were trained on *Koyaanisqatsi* and output the visuals for *The Vivid Unknown* require far greater processing grunt than was possible in 2018 (see creator John Fitzgerald's **interview with Kent Bye** for more details). [10]

*The Vivid Unknown* at IDFA DocLab, 2023. Image credit: Bernard Kalu

10 Bye, K. (2024) "#1333: AI Remix of 1982 Documentary "Koyaanisqatsi" with "The Vivid Unknown" Interactive Video Installation", *Voices of VR*, [podcast], Jan 23, https://voicesofvr.com/1333-ai-remix-of-1982-documentary-koyaanisqatsi-with-the-vivid-unknown-interactive-video-installation/

This greater level of processing power was also evident in ***William Quail's Pyramid***, in which AI systems are used to generate gibberish audio as well as video. Piotr Winiewicz, one of the creators of the project, also said that their intention was not particularly to interrogate AI in a political sense. Rather, "we just wanted to create the experience that otherwise wouldn't be possible without those tools," and were instead interested in how people tend to confer meaning onto meaningless things and can be misled by their senses. Winiewicz described the project as multilayered, and given the abstract nature of both the audio and visuals, "our hope was everybody will experience the work in a different way, and everybody will understand something different from the story, and everybody will pay attention to something different. There's just so many layers that go in a very different direction." Winiewicz and Dullaart had been hoping to use real-time generation, but found the tools were not quite powerful enough yet to enable this (no doubt at time of writing, this is a more likely imminent or even achievable prospect).

## FINDING SOCIAL BENEFIT

With *Voice in My Head*, McCarthy found that while they had been primarily intending to critique the notion of AI in relation to human consciousness, "it also revealed an optimistic side where users found genuine comfort and encouragement from the AI." She said, "It demonstrated that AI could be a powerful tool for enhancing self-awareness and emotional well-being, which I hadn't fully appreciated before." One surveyed participant acknowledged the tension between the critique and the positive potential, describing the project as "exhilarating and terrifying in equal measure." This supports the above contention that creative tech projects can push beyond a simplistic critique. Critique is certainly present here, but in acknowledging that there are some benefits to using AI as emotional support, the project then opens up a series of questions about how this might be done ethically.

Across the projects that incorporated AI, there was very little shift in the audiences' views on AI before and after they experienced the projects. There were 13 responses across a general spread of positive and negative views on the increasing prevalence of AI systems and tools in their lives: two had somewhat negative feelings, four had somewhat or strongly positive feelings, and five selected that they had a mix of positive and negative feelings. After seeing the projects, one respondent had switched to a negative view from mixed, but others remained steady in their views. Given the broad and intense public conversation occurring in relation to all things AI, it seems likely that shifts in views will occur more gradually rather than directly in response to a single project. These projects still all have important roles to play in the discourse around AI, particularly in allowing audiences a tangible way into the discussion.


Kyle McDonald and Lauren Lee McCarthy presenting *Voice in My Head* at DocLab Summit, 2023. Image credit: Bernard Kalu

## REVEALING OR OBSCURING THE TOOLS

*Voice in My Head* was clear in its use of AI tools – a voice assistant that was trained on the participant's voice would likely be recognisable to most audiences as a use of AI, and there was a printed sign next to the sound booth describing specifically which AI tools were used and how the audience's data was being processed and retained. For *The Vivid Unknown* and *William Quail's Pyramid*, however, while both projects were clear in their descriptions that AI formed key parts of their production, they were more abstract in presentation and so the division between AI generation and human direction was obscured. One survey respondent for *William Quail's Pyramid* said, "I want to know more about the involvement of the director in terms of the making of the project and to what extent is their agency altering the work? Is it just purely made by AI or is it further guided?"

This is likely to be an ongoing audience question with all creative works that involve AI, across fields and genres. In the 2018 report, this tension between clarity and abstraction was also observed. That year's report noted, "the illustration of a known concept satisfies but doesn't provoke, and an ungrounded experience provokes but also confuses. How can we provoke with clarity?"[11] This is not to suggest that a clear delineation between AI and artist must always be explicitly provided; indeed, much of the creative interest in such works lies in the uncertainty of interplay between artist and tool. But it does raise deeper questions about intent and authorship. It is also useful for artists to consider whether the audience's desire to know more about authorship is the main concern they want audiences to take away from a project.

A few of the creators observed the uncertainty in what AI would produce, with different perspectives on this. Tortum, of *Shadowtime*, said that AI has more control over us as people, and was uncertain about the lack of balance in the partnership. He likened it to a relationship with the state in which one submits papers and waits and hopes for an outcome. Wienowicz, of *William Quail's Pyramid*, enjoyed the exploratory approach of handing certain decisions to the AI, saying "we're just diving into the unknown." This uncertainty in what the creative AI tools might produce can act as a useful representation of AI in a broad sense, and a reminder that the outcome is largely unknown. Peled, creator of *(this conversation is) Off the Record*, is clearly focused on highlighting this lack of control, for instance.

11 Uricchio, W. (2019), "Interrogating AI Through Audience Interaction", *Immerse*, Nov 21, https://immerse.news/interrogating-ai-through-audience-interaction-608403518471

# CONCLUSION

Still image from *Traversing the Mist*, 2023

# CONCLUSION

It is clear that embodiment, in its framing as engendering a sense of one's body in an immersive technological context, is well understood by artists in the field of expanded documentary. All the artists interviewed had nuanced conceptions of how they used embodied practices, and of different ways that audiences might conceive of their own embodiment. Audiences, once gradually introduced to these practices, find that they deliver a substantively different experience from flat screen media. Audiences are also cognisant of being challenged, even into uncomfortable territory, and can draw meaningful experiences from uncertainty or shifts in perspective.

It is perhaps not surprising that XR documentaries often deal in multiple realities – as, in a way, this is what documentary already does, even in its flat screen form. Documentary as a form connects a small story with a large story; it invites the audience to consider a story of a character as a conduit to a broader story of change or experience. The emergence of virtual spaces enables this dual reality exploration to take on more explicit form, but now as the immersive field reaches greater maturity, these explorations are expanding in conceptual framings too. Embodied knowledge is being examined and played with, in ways that connect back to historical nonfiction practices and that do not mythologise technology.

With expansion in the technological capabilities of AI tools, we are seeing greater and more diverse experimentation – some reflexive, some critiquing, some noting potential benefits, some eliding the experimentation. The emergence of interactive documentary forms through the early 2000-2010s transformed the modes through which audiences could engage with the contained ideas,[12] and it appears that both embodied approaches and use of AI tools can continue to extend the boundaries of documentary and the ways in which it represents and examines the real.

12 Uricchio, W. (2019). Re-thinking the social documentary. In R. Glas, S. Lammes, M. de Lange, J. Raessens, & I. de Vries (Eds.), *The Playful Citizen: Civic Engagement in a Mediatized Culture* (pp. 73–91). Amsterdam University Press. https://doi.org/10.1515/9789048535200-005

**Cite this report:**
Scott-Stevenson, J. & Wolozin, S. (2024) *Embodiment, AI and the perception of the real*. MIT Open Documentary Lab.

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***Embodiment, AI and the Perception of the Real*** is part of our research partnership with IDFA DocLab Research & Development Program in 2023.

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**SPECIAL THANKS**

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THE REPORT IS FUNDED BY
IDFA DOCLAB

AND THE ONGOING GENEROUS SUPPORT OF MIT ODL/COCR BY
THE JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION AND
JUSTFILMS AT FORD FOUNDATION


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