

Cinematic Horizons: AI-Generated Environments in Virtual Production

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Donna McRae, *Deakin University, Melbourne, Australia*

[ORCID: 0000-0003-4772-9758](https://orcid.org/0000-0003-4772-9758)

Abstract

This research project documents an experimental Virtual Production (VP) exercise using an AI-generated video background. This experiment evaluates the quality, realism, and adaptability of AI-generated content in professional filmmaking scenarios. This project was asking how can AI-generated video backgrounds enhance creative storytelling and spectacle in virtual production when the system can only work from what it can generate from data?

The Avoidable Death of a Chimpanzee is a response to the relationships between humans and animals and how, because of forest clearing and biochemical medical research testing, great apes are threatened with extinction.

Link: <https://vimeo.com/1173680417/b04c600e22?share=copy&fl=sv&fe=ci>

Exploration Research Statement

According to writer Tom Gunning, at the turn of last century Georges Méliès and his contemporaries were investigating what the new invention of cinema was capable of. Gunning describes this as The Cinema of Attractions; “a cinema that displays its visibility, willing to rupture a self-enclosed fictional world for a chance to solicit the attention of the spectator”. 120 years later, Virtual Production techniques provide the same capability, but digitally – to create a world that displays its own visibility, and attempts to replace it with more flexible variations.

This research project documents an experimental Virtual Production (VP) exercise using an AI-generated video background. This experiment evaluates the quality, realism, and adaptability of AI-generated content in professional filmmaking scenarios. This project was asking how can AI-generated video backgrounds enhance creative storytelling and spectacle in virtual production when the system can only work from what it can generate from data?

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In 2025 I responded to a callout from the Deakin University Art Gallery requiring artists to respond to an earlier exhibited work – as part of the university’s fifty year celebration. Sculptor Lisa Roet’s “Forearm of chimpanzee” (2000) was the work I chose, as I had previously led a research project investigating chimpanzees in entertainment culminating in a feature length documentary entitled *Cobby: The Other Side of Cute* (2018). Roet’s work explores extinction, deforestation, and primates’ relationships to human beings. To contextualise Roet’s work I decided to recreate an African jungle with chimpanzees in the VP space using an AI generator. This new work would show a woman in Victorian dress conducting a mourning ritual. I wanted to test how accurately these new technologies could be utilised under the constraints of time, cost and authenticity of image. I also wanted to stage a scenario with a professional film crew using props, costumes, lighting, live action and mist machines.

I decided to experiment with an AI plate (using the now defunct Open AI SORA) that could be utilised as a backdrop for the creative work instead of building an environment from scratch. As Roy Hanney, Aneta Postek and Yuchen Li state: “Time scarcity, tracking instability, and a fluid colour pipeline led the team to adopt a plates-first workflow”. (Hanney, Postek, Li, 2026, p8). I was keen to test how camera tracking and parallax would work and if the frustrum rendering that displays high-quality resolution would be impacted, especially in the field of view of a built environment; but for this study the plate would suffice.

While my first attempt at prompting in SORA was simplistic, “Chimps watching in jungle canopy” produced a surprising image. It was a ten second video that had two chimps sitting on a branch in a leafy jungle and it was generated within three minutes of the prompt. I had asked for a 20 second video, but I only received the shorter version. The video itself wasn’t stabilised at all, so it was an extremely wobbly handheld move akin to being on a rough sea. It had generated 1920x1080, 30fps, in a H.264 codec for a 2D video. I was astounded, however, with the likeness of the primates, until I looked closer. The chimpanzee on the left had three forelimbs.



‘Chimps watching in jungle canopy,’ SORA, 2025

As Roland Meyer writes “... Generative AI ‘sees’ our world - a ‘seeing’ not based on the optical registration of light but on the collection of data”. (Meyer, 2025).

It isn’t surprising that the likeness of the chimps would be credible, with many images in the public domain, and with the scarceness of detail in my first prompt open to interpretation, this first image was an interesting start to the process. Testing it on the volume screen was revelatory – our screen ratio was 200.1 but the videos would only generate in 16.9. We needed to scale the image to the screen in our DaVinci Resolve editing software package – a move that, although easy, loses the edges of the image. Resolve also changed the frame rate from the 30fps ‘built-in’ rate, to 25fps, a frame rate compatible with our university camera systems and widely used in Australia.



‘Chimps watching in jungle canopy,’ Deakin VP studio, 2025

Scale in the VP studio was also problematic. As my university has the volume screen in a small purpose-built television studio teaching space, there wasn’t opportunity to place the camera at a suitable distance from the screen to create focal length for a believable depth of field. Using the above image as a backdrop would overpower any actors or props with the size of the chimpanzees behind them.

Using scale as a key prompt, I added descriptions of scenarios that may generate specific images that weren’t based in reality – (with one different word in the prompt, a tree full of chimpanzees turned to birds very easily).



Still chimp troupe vigil sunrise apocalyptic African jungle static, 2025

Once the image was chosen, I could commence testing with camera and lighting. At this stage I could engage a small camera and lighting team, an art department, wardrobe, and an assistant. We utilised the Arri Alexa Mini camera and a mix of LED and studio lights.

We adopted three performance indicators: Storytelling; Efficiency for VP cinematography; and ease of technical use. We built a small set with props, and dancer Olivia Millard improvised a funeral/mourning dance around a custom-built funeral pyre for a chimpanzee.



BTS Avoidable Death of a Chimpanzee, 2025

Millard interpreted the piece as “a story between space and the body and how the funeral pyre acts as a catalyst to the movement of the piece”. (Millard, 2026).

My dancing desire is centred around what I would describe as a collision between the physical (my body doing the dancing) and the imaginative. And I like to generate. What I am generating is most likely multiplicitous. It is movement, or movements, of course, but it is also rhythm, sensation, pathways, interactions, impulses – the feeling of dancing. In creating dance in a very particular thematic context, I am responding in the present to the ideas, the environment, a story. I am also drawing on dancing memories. They rise up in my body and disappear as soon as they leave my body. They are captured in traces on film. (Millard, 2026)

As we moved through the production day, some challenges arose around the AI plate workflow. These performance indicators of efficiency of VP cinematography and ease of technical use, as noted by cinematographer Ben Bellette, (Bellette, 2026), are listed here:

Lighting integration

“Since the AI background plate is pre-rendered and not a real time 3D environment, the lighting on the volume screen is fixed. This makes it difficult to dynamically sync the physical studio lights with the lighting within the AI footage, potentially leading to a mismatch between the subject and the background”.

Camera tracking and parallax

“Unlike Unreal Engine environments, SORA-generated content is 2D video. This means the background plate won’t shift correctly with camera movement (parallax) which can limit camera angles and movement to avoid breaking the illusion”.

Resolution and refresh rates

“Ensuring the AI video file meets the high-resolution of the LED volume without introducing moiré problems (wavy stripes of colour) or flicker when captured by the camera can be a technical hurdle”.

Our findings suggested that if we used a static image as a backdrop, and planned simple camera moves around the subject without embracing any other usual VP technology such as tracking and sync lighting, then the image was good enough to use.

The most successful performance indicator was storytelling. The AI plate created was a believable backdrop for the test. When the work was shown to an audience, no one questioned the background as fake or out of proportion; rather that it was subtle and emotive. The piece extended Lisa Roet’s work about extinction and touched on my own concerns about the relationships between humans and animals.

There are ethical considerations when using AI technology, including originality, authenticity, authorship and the impact on the environment. Ownership of the image could also be compared to the visual art medium – collage. Who is the author? The one who provides an image or the one who uses it to create new work? As Sanjukta Das and Rituparna Kundu ask: “Can an artificial intelligence-generated work be deemed genuinely original, or is it only a skilled imitation of prior works?” (Das, Kundu, 2024)

As Georges Méliés proved over 120 years ago, the coupling of new technologies with live performative dynamics can result in an original work. *The Avoidable Death of a Chimpanzee* is itself a spectacle, a work borne from experimentation with new technologies, visible in its own right, and made for the spectator. However, when working with AI generated material, it is the pairing with human creativity that makes it unique, not the data itself.

References

Bellette, B, (2026) Email to Donna McRae, 12 March.

Das, S, Kundu, R, (2024). The Ethics of Artificial Intelligence in Creative Arts: A Comprehensive Review, *Interdisciplinary International Journal of Advances in Social Sciences, Arts and Humanities*, p2, DOI: [10.62674/IJASSAH.2024.V1I1.003](https://doi.org/10.62674/IJASSAH.2024.V1I1.003)

Gunning, T, (2006). *The Cinema of Attraction: Early Film, 'It's Spectator, and the Avant Garde'*, Routledge, United Kingdom, p382

Hanney, R, Postek, A, Li, Y, (2026) Alchemy in the screen space: ritual performance through virtual production in Black Wasteland, *Media Practice and Education*, p8, DOI: 10.1080/25741136.2026.2616847

Meyer, R, "Platform Realism". AI Image Synthesis and the Rise of Generic Visual Content, (2025) *Transbordeur*, (online), p1, DOI: 10.4000/13dwq

Millard, O, (2026) Email to Donna McRae, 19 May.