Virtual Hallucinations:
Projects in VJing, virtual reality and cyberculture

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This paper discusses a variety of the author's artistic projects exploring altered states of consciousness and computer art. First, the paper will provide a brief overview of previous creative works, which include compositions of electroacoustic music, interactive visualisations, and visual music films. These previous works use the concept of altered states of consciousness as a compositional principle, as explored in the author's book *Inner Sound: Altered States of Consciousness in Electronic Music and Audio-Visual Media* (OUP 2018). Following this, a variety of the author's recent creative work produced from 2016–2019 will be discussed. These works include: a series of paintings that incorporate computer graphics animations when viewed in augmented reality; VJ performances constructed using direct animation on 8mm film, computer graphics animations generated from code and audio-reactive effects; and *Cyberdream VR*, a virtual reality experience. These interrelated projects continue to develop the author's artistic investigations into altered states, while also referencing work such as demo scene videos; cyberdelic imagery of the type seen on fliers from the 1990s rave-era; and the recent Internet-borne subculture vaporwave, which recontextualises the aesthetics of 1980s and 1990s ambient corporate music and utopian computer graphics to construct surrealistic dystopias.

Altered states of consciousness. Augmented reality. Cyberculture. Rave culture. Vaporwave. Virtual reality. VJing.

1. INTRODUCTION

In this paper I will discuss various creative projects, which I have been working on over the last few years. These works include: mixed-media paintings, some of which incorporate augmented reality features; VJ performances; and *Cyberdream,* a virtual reality (VR) experience. These have been completed partly as practice-led research, though in many cases this work also emerges from playful experimentation and improvisation with arts and technology. The main background for these projects is my on-going work regarding altered states of consciousness (ASCs) (e.g. see Weinel 2018c), yet there are also many other relevant references points, including street art, demo scene videos, rave culture imagery, and vaporwave: a recent Internet music subculture which engages with techno-utopian/dystopian ideas.

These artistic works are 'experimental' in that they are created using a predominantly 'bottom-up' process, where materials, forms and ideas are successively combined and reconstructed, allowing more forms and meanings to gradually emerge from this process, rather than being pre-determined. Because this process is on-going between works, an explanation of the overall trajectory between pieces may be informative. To provide this, this paper will begin with a discussion of background works and reference points, before providing a more in-depth discussion of the pieces produced over the last three years.

2. BACKGROUND WORK

The main conceptual basis for my creative work is my research regarding ASCs. For instance, my earlier practice-led PhD (awarded in 2012) at Keele University focused on the composition of electroacoustic music based on ASCs. As part of this work I composed various pieces of electronic

music, as well as programming software tools (e.g. using Max/MSP) that were used to realise and perform these works. These compositions were presented at events such as the *International Computer Music Conference* and others, and released on a 12" vinyl, *Entopic Phenomena in Audio* (Weinel 2014).

The main compositional method I devised utilises the concept of a hallucinatory journey as a basis for the design of materials and their structural organisation in time. Thus, using the concept of ASCs, it is possible to design sounds or images that might resemble what one might see or hear during a hallucination. For example, Figure 1 provides a graphic score for the electroacoustic composition *Entoptic Phenomena*, which uses this method. Here the graphic score describes how sonic materials unfold in time.

During this period, I also created a series of audio-visual compositions. Figure 2 is from *Tiny Jungle* (2010), which uses visual materials based on the visual patterns reported in hallucinations (for instance see Klüver 1971, p.66; Weinel 2018c, pp.19-20). Later, I also created several other fixed-media visual music pieces, *Mezcal Animations* (2013)*, Cenote Zaci* (2014) and *Cenote Sagrado* (2014, Figure 3)*. These combined analogue and digital techniques, using approaches such as direct animation on 8mm film together with stop-motion animation and computer animation.

In other work I was able to explore some of these ideas using interactive technologies. For instance, *Quake Delirium* was an early video-game prototype that provided automation of graphics and real-time audio, in order to simulate hallucinations from a first-person perspective in a video game (Weinel 2011). Later, while working as a researcher at Wrexham Glyndŵr University, I developed this project into *Quake Delirium EEG* (Weinel et al. 2015), which added passive biofeedback control to the simulation using a consumer-grade EEG headset.

Along similar lines, *Psych Dome,* was an interactive audio-visual experience for a mobile fulldome installation at Wrexham Glyndŵr University. This project (previously demonstrated at EVA London, see Weinel et al. 2014) also used a consumer-grade EEG headset to provide passive control over an audio-visual experience that was generated using bespoke Max/MSP and Processing software. The design of *Psych Dome* was based on visual patterns of hallucination.
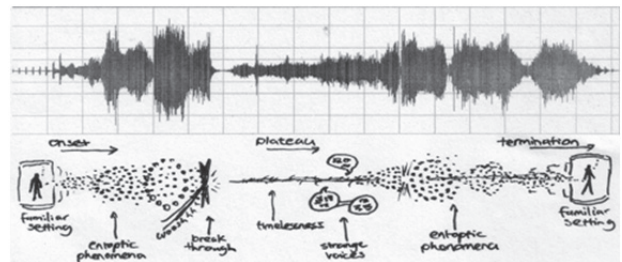

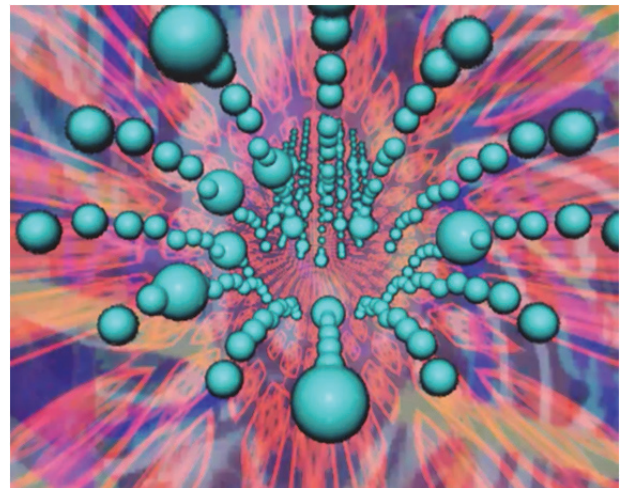**Figure 1:** *Graphic score for Entoptic Phenomena, indicating sonic materials and structure based on ASCs.*

Figure 2: *Still from Tiny Jungle (2011), with computer imagery used to represent visual patterns of hallucination such as funnels of dots.*

Figure 3: *Still from Cenote Sagrado (2014), which imagines a hallucinatory vision of the natural sinkhole of the same name in Mexico, which the Mayan's believed to be a gateway to the underworld.*

3. POINTS OF CONNECTION

Through my research, I became aware of various existing work related to ASCs across music, experimental film, audio-visual performance, video games and VR applications. Exploring this area, my book *Inner Sound: Altered States of Consciousness in Electronic Music and Audio-Visual Media* (Weinel 2018c) brings together these works and presents a new theory of ASCs in relation to the design of electronic music and audio-visual media. While the spectrum of work discussed in this book remains the main background to my creative practice, there are also other significant areas that I have recently been interested in, which I will discuss here.

3.1 Street art futurism

The futuristic spray paint art of New York artists Kenny Scharf, Rammellzee and Futura has been of interest. Kenny Scharf's paintings resemble The Jetsons as if viewed on mescaline. Rammellzee's output, recently featured in an exhibition at Laz Inc. (2018) in London presents alternative futuristic visions that he called 'gothic futurism'. Both Rammellzee and Futura's work has strong musical associations via their involvement in hip-hop culture. For instance, Rammellzee and K-Rob's 1983 single 'Beat Bop' (with cover art by Jean-Michel Basquiat) is considered a classic of the genre; and in the UK both Rammellzee and Futura collaborated with James Lavelle's Mo' Wax label, producing music and art.

Street art also featured in the 1980s L.A. punk scene, via the graphics of bands such as Suicidal Tendencies (see Clayton 2018) and Excel (see Ross and Clements 2018). This artwork is less overtly futuristic, but embodies a outlaw, subcultural aesthetic associated with skateboarding culture. One graphic of particular interest to me is Excel's artwork for their album *The Joke's on You* (1989). Here a grinning marionette is seen to explode through a TV screen, suggesting a critique of mainstream media outlets as forces manipulation. The image seems to encapsulate the idea of punk bands and zines as alternative media outlets, presenting messages that resist the forces of a capitalist mainstream, which in the USA at that time can be broadly associated with Reaganomics.

3.2 Demo scene and rave culture

While these punk and hip-hop subcultures used spray paints, in the late 1980s and 1990s the computer became a significant tool for the production of subcultural media. The 'demo scene' is one example of this, where hackers and programmers wrote code generating short audio-visual demonstrations. As discussed in Polgár (2005), these were traded through informal networks of computer users. The demos themselves provided futuristic and virtuoso computer geometric graphics animations for computers such as the Commodore 64, Amiga or Atari ST.

The home computer was also significant as a tool for the production of hardcore electronic dance music (e.g. see Low Entropy 2018; Weinel 2018b). Similar aesthetics to the demo scene are also found in 1990s VJ performances such as Studio !K7's *X-Mix* series (1993–1998), and in the fliers for megaraves such as Fantazia (e.g. Exeter, 31 December 1991) or Dreamscape (e.g. Milton Keynes 6 December 1991), which suggest surrealistic, euphoric virtual realities. A number of VHS tapes of VJ performances were released from this period, such as *Dance in Cyberspace* (1992) and *Future Shock* (1993).

The late Mark Fisher (2014) argued that rave culture had a strong futuristic drive, apparent through the imagery on fliers and record sleeves, as well as the sounds and science-fiction references embedded in the music. In one sense the accelerated rave culture could be seen as techno-utopian, but the subcultural vision of the future they present could be viewed as an alternative to the seemingly safer techno-utopianism suggested by the designs of Silicon Valley companies such as Intel, Apple or Microsoft.

Considering the latter, the techno-utopian roots of computer culture are explored by Turner (2006), who draws connections between idealistic hippie communities in the 1960s, The WELL bulletin board system, The Whole Earth Catalogue, and Silicon Valley (see also Henrick Bennetsen 2011). Analysing techno-utopian themes in an Intel Inside commercial, Philip Tagg (Etymophon 2010) breaks down the many ways in which the brand identity references ideas of global consciousness, ecology and enlightenment through technology. Similar symbolic meanings can be found embedded in many other computer artefacts of the time, such as Microsoft's Encarta 95, which features utopian symbols of space travel, ecology, liberation and high-culture on it's box art and splash screen. Rave culture can be understood as responding to the techno-utopianism of the era, but both the music and imagery of rave culture also suggests a more hallucinatory, surrealistic, and at times dystopian vision of the future.

3.3 Vaporwave

Originating in the early 2010s, vaporwave is an Internet music subculture that remixes banal 1980s–1990s pop, elevator music, late night TV commercials and library music, looping and slowing down these sounds *ad infinitum*. The music is

frequently packaged with the aforementioned techno-utopian imagery from early Apple and Windows computers (Chandler 2016a, 2016b). In Tanner's (2016) discussion of vaporwave, which references Mark Fisher's (2014) discussions of hauntology and 'lost futures', he argues that vaporwave can be understood as a critique of late comsumer-capitalism, since it exposes the unreality of these lost techno-utopian futures. Sonically this is achieved primarily by presenting the capitalistic soundscapes of this era as broken cassette loops (i.e. slowed down, looping non-seamlessly with wow and flutter artefacts). In the case of Cecil Robert's YouTube channel (e.g. 2017, 2018; see also Tolentino 2018), these broken soundtracks are framed in empty shopping centres, suggesting bizarre dystopian futures in which these commercial centres have been abandoned, but remain haunted by seductive media artefacts that suggest self-improvement through products purchases.

Tanner's argument is compelling for some vaporwave, though it is also worth highlighting that vaporwave has fragmented into many substrates, some of which may resist this explanation. In general however, the genre can be seen to explore nostalgic, utopian, dystopian or futuristic tropes. In some cases, this form also incorporates other contemporary music influences such as footwork or trap (e.g. see Vaperror's *Mana Pool* [2014] or *Polychromatic Compiler* [2015]).

In other discourses, vaporwave has also been compared to the surrealist or dada movements, since it presents jarring juxtapositions of utopian Internet culture and capitalist imagery that expose the irrationality of digital culture. Connecting this with Douglas Rushkoff's concept of Internet culture as a mass hallucination (via William Gibson; e.g. see Rushkoff 2018), vaporwave could be seen as exposing the irrational nature of that hallucination, not unlike the surrealist movement's aim of eliciting the irrationality of dreams and the unconscious through art.

3.4 Drawing connections

Along with ASCs, the above are the main areas that have informed my recent work in terms of ideas and techniques. For example, my work uses techniques such as airbrushing (similar to spray paint), writing code to generate computer graphics, and electronic music sequencing with trackers.

I am also working with the symbolic languages used by the above areas. These areas of culture interest me because the work is broadly engaging with ideas of what possible futures could look like, as explored through sounds and/or visual imagery. In many cases this work is subcultural in that it is

responding to, or resisting, a perceived mainstream (accepting that this in itself may be limited, since subcultures themselves are often assimilated as a means to fuel capitalist enterprises [e.g. Haenfler 2014, p.46]). Manipulating these symbols may allow new futuristic visions to be constructed, and/or come to terms with our relationship with these 'lost futures'. These ideas are not complete, but are gradually unfolding in my ongoing work, which I will now discuss in further detail.

4. AR PAINTINGS

In 2016–2017 while working in Aalborg, Denmark, I began working on new visual artworks using acrylic paint and ink, later continuing this practice when I moved back to London in 2017–present (Figure 4). These paintings were created alongside the VJing (discussed in the next section) and are complementary works. Some aspects of these paintings are based on visual hallucinations, and in most cases they are created in response to music (see also Weinel 2018a).

I began exploring new visual arts techniques, such as collaging and the use of an airbrush with digitally cut stencils. *Trip at the Brain* (2017) and *Purple Traps* (2017) take punk and trap music as sources of sonic inspiration, interpreting these forms as pen sketches, which are then scanned and digitised, digitally cut into a stencil, and rendered on paper with an airbrush.

The compositions *31 Seconds* (2017) and *Bug Powder Dust* (2017) reference music by Origin Unknown ('Valley of Shadows', 1996) and Bomb the Bass ('Bug Powder Dust', 1995), respectively. They combine airbrushed stencilling with collage elements and acrylic flow techniques. The skeleton designs of the latter painting reference William Burroughs's 'shotgun paintings' (Riflemaker 2005), in correspondence with the Bomb the Bass song, which is based on the novel *Naked Lunch* (1959).

As noted, these paintings were created alongside working on VJ materials, and in some cases the same materials are directly incorporated. *Enter Soundcat* (2017), *Soundcat S-101* (2017) and *Soundcat 2000* (2017) each feature digital prints from my VJ productions. These three paintings are enhanced by Augmented Reality (AR). When viewed through an AR device, the computer graphics animations are brought back to life as animated videos. This extends an idea I previously experimented, where elements of a painting are video mapped with a projector running Mad Mapper. The paintings also feed back into my VJing and VR work, since I frequently incorporate related compositional elements in these other forms.
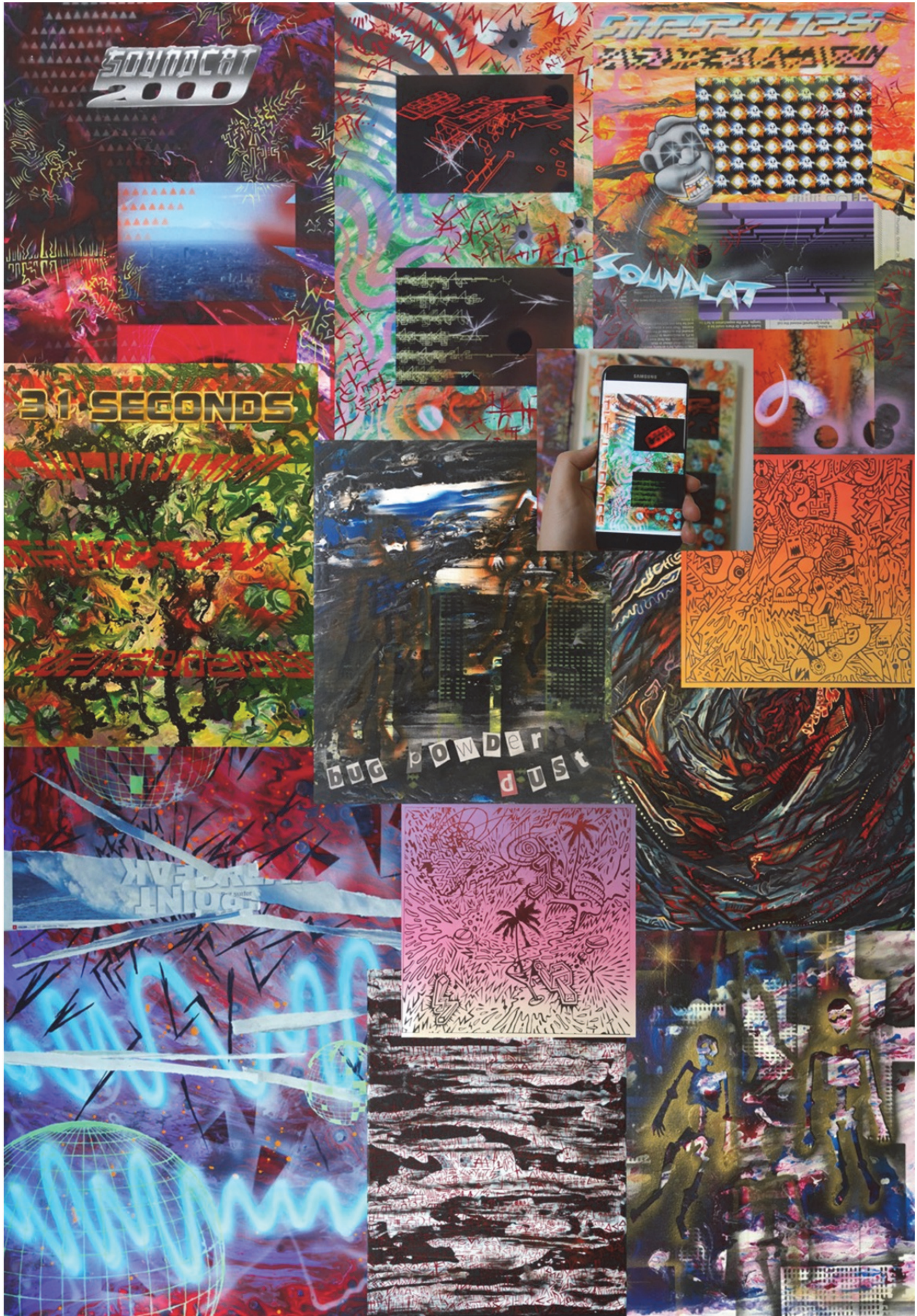
Figure 4: *Various paintings (clockwise): Soundcat 2000, Soundcat S-101, Enter Soundcat, Trip at the Brain, Vortex, Hole in the Sky, Purple Traps, Seasons in the Abyss, Holo_Point_Break, Bug Powder Dust, and 31 Seconds (2016–2018).*

5. VJ PERFORMANCES

My VJ work under the alias Soundcat (2018, 2019) began as an extension of my work making fixed-media visual music films. My initial experiments involved mixing direct animation footage in real-time using VDMX with various types of music. This process allowed the exploration of visual imagery in relation to different music forms. At this time I was exploring mixing visuals with different forms of psychedelic rock, electronic dance music and others, often for hours at a time to explore what different audio-visual combinations felt like.

Developing this work, I began writing code in Processing to create computer graphics animations similar to those seen in demo scene videos. For instance, I created moiré patterns, plasmas, and various rotating geometric forms. Some of these materials incorporate ideas related to vaporwave, displaying UI features. This work gradually developed to include a variety of 2D and 3D animations, which draw influences from 1990s rave VJing.

Some visual materials were created using an Akai MPC controller to trigger visuals rhythmically in time to the music. I also creating audio-reactive visual effects patches in VDMX, and in one instance entered a MIDI sequence on a tracker (Renoise) to match the rhythms of a jungle track. This MIDI data was then sent to VDMX and used to trigger 3D video clips created in Cinema 4D, in synchronisation with the music.

I formulated this work into a live DJ/VJ set, incorporating various existing breakbeat music from the 1990s rave era and beyond (Figure 5). I performed in London and North Wales in 2018. I wanted to mix the audio myself since I have a background DJing at raves, and wanted to explore my own configurations with the visual material. To allow the live mixing of sound and visuals together, I created pre-recorded music videos for each track I wanted to mix. Using this approach, videos are created in the studio through improvisational mixing of visuals and multiple video overdubs (a process I associate with dub-reggae music production techniques, especially Lee 'Scratch' Perry). The DJ/VJ performance is then realised by mixing a set of original music videos as a DJ set.

This approach allows the final performance to focus effort on the manipulation of the music as DJ. The approach is relatively inexpensive computationally (since complex audio reactive effects are pre-rendered) and tends to allow greater variety in the visual materials. While performing the DJ/VJ set, I also trigger 'one-shot' audio-visual materials using an Akai MPC controller.

Figure 5: *Various Soundcat VJ materials.*

Figure 6: Stills from Cyberdream VR.

6. VIRTUAL REALITY

Extending my work making paintings and VJing, I created a virtual reality project: *Cyberdream VR* (Figure 6). This project provides a virtual reality experience based on the concept of a hallucinated vision of broken techno-utopian vistas in cyberspace.

In its current form the project provides a short demo (c.5 minutes) in which the viewer fliers through a sequence of scenes. These extend many of the ideas discussed earlier in this paper in relation to vaporwave and rave culture. The scenes are dystopian in that they represent utopian symbols as broken, yet they could also be read as euphoric deconstructions, where these fragments once liberated from their formal constraints become a playground of new possibilities.

The first scene is a fractal electronic landscape based on a Fantazia rave flier, with sculptures of strange creatures and chequerboard designs. Next, we fly over an infinity pool (a powerful aspirational symbol of consumer capitalism), littered with the vacant heads of giant manikins. Following this, we enter a colourful room with airbrushed walls (made using a real airbrush). Next, we are flying over a chequerboard landscape in which Atari ST cursors rain from the sky, while fallen Grecian sculptures stand bowed in the water.

In the next two scenes we are surrounded by cycling waves of brightly coloured cubes. These were technically made using the 'plasma' coding technique used in demo scene art (e.g. see Vandevenne 2004), but by adapting this idea in 3D the scenes give an impression of being inside the pixels of a monitor, while also referencing the Windows '95 logo. The viewer then enters another airbrushed room in which spheres move in Lissajous patterns.

Finally, we enter a dark space surrounded by chaotic flickering arrows, with the text "the future is lost, crash the system, back to the tribes". This can be read as a commentary on the loss of a techno-utopian future that was once imagined, and a call to break down the digital structures that bind society and reformulate them in new ways. The comment 'back to the tribes' hints at the idea of technoshamanism (Weinel 2018c, pp.90–93) but is also a nod to free-party rave culture (e.g. Spiral Tribe).

Musically, *Cyberdream VR* utilises various electronic music. Some of these works are short pieces in electronic dance music styles such as acid house, hard trance, breakbeat hardcore, grime, and speedcore techno. Other scenes use the plunderphonic approach (music made from

existing audio recordings, as discussed by Oswald 2004) of vaporwave music. The latter pieces were made using pitched-down digitally processed loops of library music (i.e. production music, as discussed in Hollander 2018). The loops are taken from corporate library music from the CD-era of library music in the 1990s. The original tracks were designed to enhance productivity and induce aspirational capitalist emotions.

At the time of writing *Cyberdream VR* exists as demo versions for Oculus Gear VR and VR Cardboard, the latter of which will be shown at Sci-Fi London Festival in May 2019. In the future I plan to make an expanded version for Oculus Quest. In particular, I plan to develop of an interactive function that allows the user to click on statues hidden throughout the levels, which will then send the 'dream' in different trajectories, borrowing ideas from the game *LSD: Dream Emulation* (discussed in Weinel 2018c, p.146). I also anticipate further work exploring ways in which transitions can occur between sections in the app, as well as experiments translating the project into other 360-degrees presentation formats such as multi-screen projection environments.

7. SUMMARY

In this paper I have provided a journey through the conceptual ideas and practices I have been exploring over the last few years. Technically these works integrate various practices using traditional materials such as paint alongside digital techniques. I am broadly interested in way in which artistic forms can be explored across the boundaries of the analogue and the digital. In terms of ideas, my work continues to explore the representation of dreams, hallucinations, and synaesthesia. However, I am now engaging with different philosophical concepts related to lost futures, techno-utopias, dystopias and subcultures.

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