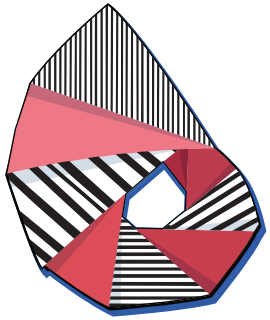

RTD2015

21ST CENTURY MAKERS AND MATERIALITIES

Proceedings of the 2nd Biennial Research Through Design Conference | RTD 2015

Schofield, G. 2015. R.O.V. Digital Artwork as Narrative Controller. In: Proceedings of the 2nd Biennial Research Through Design Conference, 25-27 March 2015, Cambridge, UK, Article 16. DOI: 10.6084/m9.figshare.1327982.

R.O.V. Digital Artwork as Narrative Controller

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Abstract: As we consume information about the world, we trust certain visual codes implicitly. From the distinctive fonts on road signs to the hard-edged forms of scientific equipment, these aesthetic memes work through association and reinforcement. A constant negotiation takes place: partly through consensus and partly through centralised systems of authority. This is the truth and it looks like this.

These codes and the underlying truth which they purport to convey are mutable, shifting and temporary. As discoveries are made and theories revised and rewritten, the visual tropes associated with them are erased and remade, losing their aura of truth. The copperplate text of Darwin's journals now has an air of quaintness and naiveté: a feel of the arcane and the alchemical. For us the truth now comes through the sharpness of news footage: the coloured pipework of the Large Hadron Collider, the calm voiceover of a documentary film.

R.O.V. is a narrative controller exploring the epistemology of exploration, discovery and cartography. Encased in a rugged hazard-yellow field box the piece appears to be a controller for a remote control submersible. Twin joysticks, switches and knobs allow the user to explore an underwater landscape, displayed on a monitor embedded in the field box. This environment, rendered in 3D graphics, is based on Kampanakis' 1891 map of Atlantis: itself an attempt to render credible a myth: a centuries-old string of Chinese whispers emanating from a chance remark in Plato. The piece represents both an attempt to use the aesthetic of an interface as a narrative device and to explore layers of truth, representation and misconception.

Keywords: Narrative controller; Narrative environment; Structured engagement; Materiality.


NAVIGATION
1 2 3
RESET
!WARNING!
CLEAR R.O.V
OF OBSTACLES
BEFORE RESET
YAW
STARB
ROLL
PORT
LIGHTS
(FORE)
LIGHTS
(AFT)
CAM
1
CAM
2
BALLAST

Introduction

R.O.V. is a small-scale interactive digital artwork about the epistemology of exploration, discovery and cartography. R.O.V explores, via a Research through Design process, how the aesthetic of an interface can be used to structure in detail, a particular type of encounter. R.O.V functions as a narrative controller: (Smith 2014) an interaction device which, through material and formal qualities, supports or extends narrative elements of the system to which it provides an interface.

R.O.V builds on a number of previous works by the author (2007) which have addressed the inherently untrustworthy languages of TV and video. In some of these, computer graphic imagery masquerades as live video, creating scenes that make sense visually but are incomprehensible in terms of action: people step over sleeping figures in the streets, ghost warships track forever over endless seas. Others simulate imperfectly the languages of broadcast news and documentary, using them to elicit an awareness of their inherent treacherousness.

R.O.V. further explores these concerns in the form of a small self-contained digital artwork. Using relatively simple technical means, the piece explores how visual and material motifs can be used to structure engagement with a piece of artwork in order to explicitly discuss a theme. The work, designed for exhibition in galleries, is an attempt to build these strategies into a coherent whole. R.O.V. is the first of a planned series of artworks which use narrative interfaces to structure different types of encounter.

Figure 1. A still from Sleepers by the author (2007).

Lost Continents: Pseudoscience and Deception

R.O.V involves a simulated exploration of Atlantis, the lost continent first described by Plato in 360BC in Timaeus (in Taylor 1928). In the dialogue Plato refers to the island in a speculative plan for fighting a hypothetical foreign power somewhere out to sea.

> "...For in front of the mouth which you Greeks call, as you say, 'the pillars of Heracles,' there lay an island which was larger than Libya and Asia together; and it was possible for the travellers of that time to cross from it to the other islands...Now in this island of Atlantis there existed a confederation of kings, of great and marvellous power, which held sway over all the island, and over many other islands also and parts of the continent." - (Plato in Taylor 1928)

After his death, Plato's account was cited by Crantor and later by Proclus in texts which disagree as to whether the island was real or solely a metaphor, invented for the sake of an argument (Nesselrath 2005). Despite this tenuous beginning, Atlantis has captured the imagination of countless writers in the intervening 2000 years. Historians, archaeologists, evangelists and chancers have written authoritatively on the history of the island, its geography and what happened to its inhabitants. Atlantis and its people have been used to fill perceived gaps in anthropological records (Tripp 2004), and to support belief systems ranging from theosophy to National Socialism (Blavatsky 1888).

Figure 2. R.O.V.

Accounts of Atlantis vary wildly in both style and quality. Some, such as *Donelly's Atlantis: The Antediluvian World* (1882) and *Spence's History of Atlantis* (1927) rely for their persuasive power on the formal aspects of scientific texts to cover a lack of evidence: a shell of authenticity disguising a hollow core. Others use visual forms that seduce with detail. Illuminated maps such as Kampanakis' map (1893) are so full of contextual detail that they surely must be true.

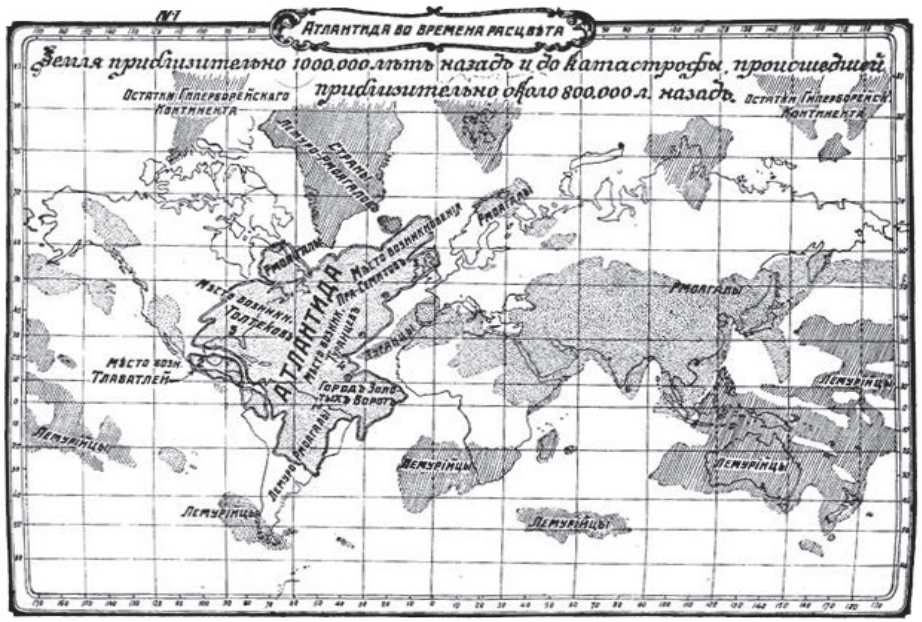

Figure 3. Atlantis located in the Atlantic (1910)

These accounts are so convincing because as we consume information about the world, we also learn to trust certain visual codes implicitly. From the distinctive fonts on road signs to the hard-edged forms of scientific equipment, these systems of signs work through association and reinforcement. A constant negotiation takes place: partly through consensus and partly through centralised systems of authority. *This* is the truth and it looks like *this*.

This trust in certain systems of signs survives despite an increased scepticism and a general awareness of how easily data – and especially images – can be manipulated. It has been speculated that Plato himself went to some lengths to make it clear in his text that Atlantis was a myth, precisely because of his own distrust of imaginative writing (Annas 2003).

The formal aspects of truth are mutable, shifting and temporary. As discoveries are made and theories revised and rewritten, the visual tropes associated with them are erased and remade, losing their aura of truth. The copperplate text of Darwin's journals now has an air of quaintness and naiveté: a feel of the arcane and the alchemical. The scientific connotations of brass and hardwood instruments have been written over with other materials and forms. Victorian scientific kit now speaks to us of antiquity, steampunk, the gothic, the occult.

For us, the truth now comes through the sharpness of news footage, the coloured pipework of the Large Hadron Collider, the calm voiceover of a documentary film. Yellow metal signifies construction, orange goretex, search and rescue. Brushed aluminium and white plastic - for now - is new technology. When interacting with a new technology, our instinct is to remediate: to understand new forms in terms of the familiar. We see through a set of semiotic filters that get thicker with experience, so that each new object becomes surrounded with flickering ghosts of associations.

In film and games, these material associations are often used to establish a theme, to render disparate elements into a cohesive whole or to support a narrative. Famously, Orson Welles' radio adaptation of H.G. Wells' *War of the Worlds* began by assuming the form of a radio news broadcast. The result was so convincing and compelling that listeners mistook it for the real thing, resulting in chaos (Gosling 2009). Films such as *The Blair Witch Project* (Sanchez 1999) and *Cloverfield* (Abrams 2008) also rely on this appropriation of a set of visual and textual motifs, making the leap of faith necessary to achieve a willing suspension of disbelief, more instinctive, more easy to make. Using certain styles of camerawork, editing and image qualities, these films simulate visual codes which signify the real, adding weight.

Figure 4. R.O.V. detail.

Ridley Scott, in an interview about the complexity of production design in *Blade Runner* (Scott 1982), describes the film's environment as another actor: an active voice in the story, who adds vital detail and atmosphere to the narrative (Scott in Lauzirika 2007). Architects and more recently game designers have begun to explore the creation of narrative environments: spaces that through their spatial and material properties speak of past and future inhabitants, events and histories. 2K's *Bioshock* (2007) series of games were noted for using the setting of a highly detailed underwater city not just as a stage for the game but as a way of presenting a linear narrative in a non-linear 4-dimensional way: players pieced the story together from fragments of information inscribed in the environment.

Figure 5. R.O.V's integral screen with waypoint and orientation beacons.

Narrative Controllers

These phenomena are of particular relevance to designers as they rely on controlling the specifics of an encounter with technology at a range of scales. The shape and configuration of spaces and objects are often used to structure the experience and are planned with great care, however: interestingly, in films and games, use of these visual languages rarely extends beyond the screen. When Ridley Scott attempts to immerse us in the futuristic world of Blade Runner, we still feel the cinema seat or sofa beneath us. When we explore an alien spacecraft in *Alien:Isolation* (2014), we do so with the same generic plastic controller we used to race cars in *Gran Turismo 6* (2013).

There are of course straightforward, practical reasons for this: cinema and games both rely on the presentation of disparate content through standard formats simply because this is a more cost-effective way to reach large audiences. Developing bespoke controllers for commercial game projects has been largely unexplored. In considering interactive environments, the impact of the tactile, material properties of interfaces on engagement, has been somewhat neglected.

R.O.V.

R.O.V. uses visual, tangible and haptic means to guide the user through a set of conceptual and virtual spaces. The physical installation is a *narrative controller*: a digital interface which uses material and formal properties to encourage a playful process of discovery and immersion. R.O.V. is a fake controller for a Remotely Operated Vehicle: a small robotic submersible. In the field of marine research, an R.O.V. is a self-contained exploration device, often fitted with cameras, lights and robotic arms. R.O.V.s are typically used to explore particularly hazardous submarine environments, working at great depth or in dangerous conditions (Christ and Wernli 2011).

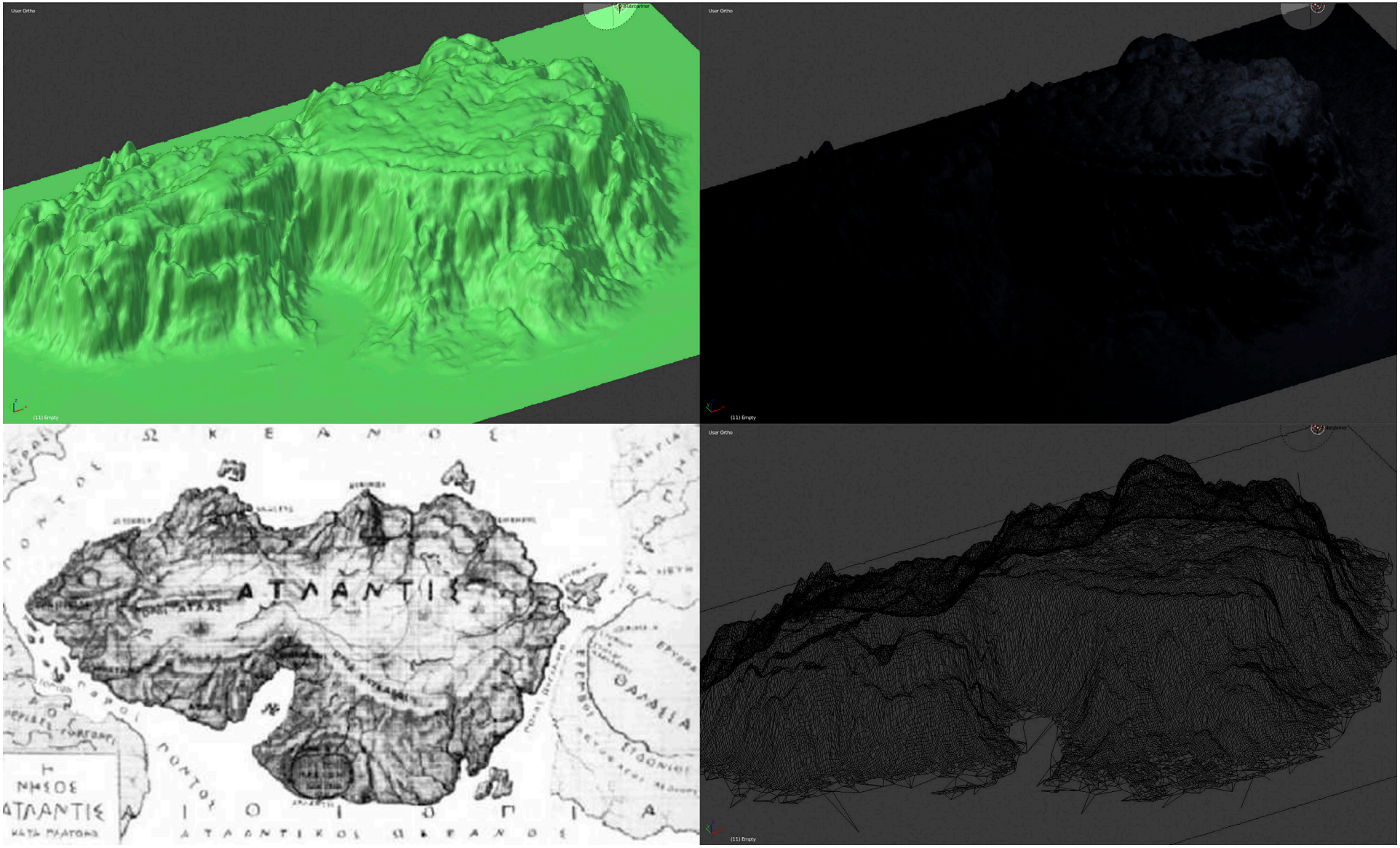

Figure 6. Working up the virtual environment from Kampanakis' map.

Contained within a hinged field box, a small LCD monitor displays grainy colour video feeds of a craggy underwater landscape from cameras apparently mounted on the vehicle: one pointing ahead into the darkness, the other looking straight down towards the sea floor. Two compass-like pointers display the craft's attitude in relation to the surface and point towards a number of navigation waypoints. A control panel enables the user to pilot the craft via two joysticks, adjusting thrust, roll, pitch and yaw. A dial allows control of the craft's buoyancy.

Two rocker switches enable changing between cameras and control of headlights on the outside of the submersible. Yet another dial can be used to switch between waypoints, allowing the user to navigate between them. Lastly, an emergency reset button hauls the submersible back towards the surface in the case of a user becoming stuck between rocks or hopelessly disoriented. Using the controller, users can travel around the landscape, gliding through underwater canyons and valleys and following waypoints which lead into the darkness.

This controller itself is a mix of custom-made and off the shelf parts. A Chinese military ammunition case forms the shell of the piece, hinged at the corners and painted hazard yellow. Arcade-grade joysticks and heavy steel and aluminium switches form the interface, set into a laser-cut acrylic control panel held together with shiny nickel-plated bolts. The controls are connected to a pair of USB joystick encoders behind the panel, which enable the piece to be run from a PC outside the box.

The environment is rendered in computer graphics, using Blender Game Engine with physics and controls provided through Blender's inbuilt 'Bullets' physics system. This allows the submersible to move realistically through its environment, affected by gravity and momentum. The landscape is a single polygonal mesh worked up from a height-map which is in turn derived from Kampanakis's map of Atlantis (1891). The bare rocks visible across the terrain were textured using various screen-grabs of artists' renderings of Atlantis, taken from a variety of different sources.

Trajectories of disappointment

Previously we have seen how various media use the structure and detail of objects and environments to structure narrative. In designing R.O.V., the intention was to use some of these strategies to build a coherent interactive piece in which the details of the interaction scheme supported the conceptual basis of the piece: that of discussing the implications of pseudo-scientific discovery. These two intertwined concerns were used throughout the work to carefully structure the piece in narrative terms.

In Human Computer Interaction, much recent attention has been given to strategies for managing interaction over time. Benford et al's (2011)

work on trajectories, builds on Ingold's (2009) thoughts on Wayfaring and navigation: describing the routes that people take through an encounter with a piece of technology. In this way, viewers can be signposted through a piece of interactive art by means of distributed systems of signs, much as a narrative is encoded in the video game and film environments discussed previously. This signposting can be used to manage participants in time and space, for example, ensuring that they experience events in a certain sequence. Taylor et al. (2014) extend Benford's trajectories model to the deployment of genre and familiar theatrical form to not only create a particular atmosphere but to prime visitors to expect a certain type of interaction. For instance: with the right props and costumes, the format of a sideshow can be appropriated to instruct viewers that they are permitted to 'roll up' and to reassure them that talking and touching is allowed.

This has much in common with the work of a growing number of experimental theatre companies and artists who have experimented with physical narrative environments. Punchdrunk Theatre's productions Sleep No More (2011) and The Drowned Man (2013) feature vast and richly detailed sets in which every hand-crafted object draws the viewer further into the narrative. Despite being presented as interactive, many of these works are tightly structured in terms of viewer experience. In The Drowned Man, viewers roam a huge building consisting of hundreds of beautifully detailed rooms through which visitors wander. However, as the

Figure 7. Detail of the control panel complete with fake serial numbers

narrative progresses, doors are closed, rooms disappear and the audience is funnelled through the environment to a finale, which plays out in a traditional stage format.

In the design of R.O.V a similar approach was used to support viewer engagement albeit on a smaller scale. In the real world, R.O.V.s are often used for exploring underwater environments too deep or too dangerous for human divers. They are hardly a common device, belonging to a class of machinery that in society's imagination operates at the boundaries of the known world, as exotic as spacecraft, bringing us fleeting views of strange sea-creatures, weird rock formations or the wrecks of ships. This starting

point sets the scene, providing a context for the interaction that follows while also suggesting disembodiment, mystery and dislocation.

In R.O.V., despite the piece's interactivity, the trajectory of the encounter is fairly linear. The way in which the piece engages visitors mirrors the subject matter: the elusive Atlantis, a place known only through fakery and simulacra. Viewers' interactions with the piece are designed to follow a journey of engagement, exploration and ultimately disillusionment. Seduced by the material qualities of the work, the viewer is lured into interacting with it and the haptic satisfaction of manipulating the controls and discovering their effect leads her/him into exploring the environment.

At the next stage, the illusion falls apart. Each component of the piece was chosen to simulate a viewer's expectations of how a real submarine controller might look and feel, but to do so imperfectly. At first glance, the installation looks convincing. The forms are glossy and rugged, slightly worn; the joysticks and switches are satisfyingly heavy, and solid, however on closer inspection, the Perspex panel is too glossy and the sharp, laser-cut lettering does not quite conform to expectations. The viewer realises that the visual accent here is wrong: this is a hand-made object masquerading as something mass-produced and scientific.

The computer graphic environment displayed on the screen is realistic enough to stand up to a few moments viewing from a distance but soon reveals itself to be a CGI landscape, covered with a repeating and uniform set of textures. The waypoints lead to non-places: arbitrary areas of mountainous rock. After drifting around the underwater landscape, it rapidly becomes clear that there is no discovery to be made here. The entire piece is built around a void, a lack of resolution and satisfaction: a vague sense of disappointment, meant to reflect the void within the pseudo-scientific texts upon which the piece is based.

Exhibiting R.O.V.

In readying the work for exhibition, preparations are also being made to ascertain whether the approaches used are successful. R.O.V. is an exercise in the detailed application of theory from art, theatre, film and HCI. The greatest challenge in planning the work was balancing the encounter; attempting to achieve a tension between disappointment and disillusionment on one side and sustained engagement through aesthetic satisfaction on the other. Whether this balance is achieved will rely on whether the trajectory built into the encounter is properly communicated to the viewer; whether they are willing and able to follow the signposts designed into the work. The piece is designed to stand alone, without needing explanation or interpretation.

At the time of writing, the work is being submitted to various group exhibitions. These exhibitions will be used as test-sites at which viewers will be observed interacting with the work and later questioned on their understanding of the piece. The eventual goal of the work is to be able to isolate which of the devices deployed in its making best support the detailed structuring of encounters. Knowledge gained from this will form the basis of further, more complex artworks but will also contribute to a growing body of research examining how the aesthetic and material properties of an interface can be used to structure engagement.

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