

**How image makers have utilised digital technology
to explore the environment, in the
technological world?**

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Research in Context

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Will technology change the way individuals think about art? Or will it destroy the human act, which goes into creating art all together? In 2024 technology is becoming more

advanced, with new technologies being made every day and being used for multiple purposes including art. In this essay I be exploring how different artists have used, digital technology to investigate the way it affects the natural environment. I will be discussing three artists who are using different technological devices, to showcase the damage and danger that is being caused to the environment. The first artist used digital technology to create photographs, showing the physicality of the internet in nature through exploring fibre optical cable landing locations. The second artist uses technology within a natural environment, creating an unnatural alignment drawing attention to the concept of real and unreal, highlighting that the actual state of things shouldn't be fixed, instead encouraging potential change and growth. The final artist uses digital technology to present a visual representation of how using different platforms of the internet can negatively influence the natural environment, making a direct social commentary on the impact of our digital activities on the environment and the damage it is causing.

Evan Roth



Fig. 1: *Landscape with Ruin*

Figure 1 presents Evan Roth's piece *Landscape with Ruin* from his Landscape series, displayed on phone screens, TV-screens and monitors arranged neatly in the gallery in a collage format, depicting red colour landscapes. Roth has intentionally kept the wires visible in this work; the cables are laid out on the floor almost like a sculpture, spreading out of the room and into the walls. Roth created the images by using devices which he made himself, manipulating digital technology to produce photographs which show the physicality of the internet in nature, through exploring fibre optical cable landing

locations. Roth has said that “I want to learn more about the physical and spiritual foundation of the internet by documenting its infrastructure using technology designed to detect ghosts” (The Awesome Foundation, 2014). Roth has used digital technology by photographing and filming the environment, with a device he made and with a camera which he has altered to shoot with a near infrared spectrum. He often takes a range of ghost hunting technologies with him, such as a full spectrum video camera, heated flashlight and an electronic voice event recorder. He uses these to collect data from close public computer input/output devices such as internet browsing history and stock data.

Roth’s piece arguably questions the nature of the photograph and the role or purpose it plays. “From the manifestly weighty daguerreotype to the weightless abstraction of an ordering of algorithms, photographs have been metal, glass, paper, film, and finally a volatile presence in cyberspace” (Fontcuberta, 2014). Using infrared technologies Roth develops the purpose of photography. Through both the physical and conceptual aspect he explores the change of photography from a physical, material art form to an abstract, ghostly medium in the digital age, highlighting both the technological development and the changing nature of how individuals understand and interact with photographs.

Pierre Huyghe



Fig. 2: *Variants*

Pierre Huyghe has created a real-time simulation called *Variants* (2021), (see figure 4), which is displayed on a large TV screen, situated within an isolated island which often gets flooded and is inaccessible. The TV screen presents an image which looks like a close-up of an animal skeleton that has been found on the island, recorded and mutated into a digital capture which he has then, placed back into its original place in the forest, shown on a TV screen. Alongside these screens, the sound of a bird can be heard but it has been distorted, mutated, then played back again digitally (Barikin, 2022). The sound no longer resembles an animal but instead a digital reconstruction more aligned with an alien sound. In the words of the media theorist Lev Manovich, “digital media are graphics, moving images, sounds, shapes, spaces, and texts that have become

computable” (Earnshaw, 2020). *Variants* reflects on this theory through scanning the island and applying his findings which he later digitalized, manipulated and distorted such as sounds from birds, and scanning of animal skeletons which he puts back into the environment. Huyghe’s use of technology within a natural environment creates an unnatural alignment drawing attention to the concept of real and unreal. “One Milieu was given: the natural. I wanted the actual to host a possibility of itself” (Barikin, 2022). Through bringing attention to synthetic forms within the natural world and its conditions, Huyghe highlights that the actual state of things shouldn’t be fixed, instead encouraging potential change, growth or alternate possibilities for the island to be recognized as an alternative reality. The use of manipulated sound and digital technology within nature arguably makes a social commentary on the fact that certain digital technologies and information are hidden. Within the island Huyghe used digital ethnology and hidden cables to create a network that make up the whole island, with the viewer not knowing this until they get to the artwork whereby they are then confronted with this imposing reality and left with the feeling of paranoia, because they know now that there are cameras everywhere (Kistefos, 2024). Huyghe has created this island to show how part of information can be faked and how we have no privacy in the natural environment. The viewer does not realise there are hidden cameras until the end making them part of the artwork, both the observer and the one being observed; the viewer is thereby controlled by the artwork and artist to an extent.

Thijs Biersteker



Fig.3: *MB >CO2*.

Biersteker has used digital technology to present a visual representation of how using different platforms of the internet can negatively influence the natural environment. His installation *MB > CO2*, demonstrates how carbon emissions are generated and released through everyday online activities. This piece of work is divided into three sections. The first element shows three monitors connected to each other each displaying different online activities such as “a zoom call to a Spotify playlist” (Hahn, 2022). The second element is a minicomputer that uses algorithms to determine how much CO2 is used for each activity and this is then transferred into the third section which is the circular spherical terrarium which has a live plant inside. The work makes a direct social

commentary on the impact of our digital activities on the environment and the damage it is causing. Biersteker argues that "Sometimes making complex problems smaller and relatable helps us understand the bigger picture again" (Hahn, 2022). Through highlighting bigger issues around the environment and technology into a smaller installation that can be seen by all, enables the information to be understandable. Overall, the use of digital technology can be an overwhelming subject but through breaking the information down and making it readily available it flags the concerns around technology and the impact on the natural environment.

Within Technology, *Design and the Art*, Earnshaw discusses "A construct that rationalizes data flow, making visible the hidden nature of all data flowing within our big data system" (Earnshaw, 2020). *MB>CO2*, works as a visual representation of how data flows through technologies with such ease and shows the hidden outcome it has on the environment. This technology arguably makes the viewer more aware of technology usage in addition to how these data systems collect and use information. This work shows three sections which present a visual representation of how the internet calculates the data, which travels into a metaphorical environment demonstrating how nature is being affected by this.

This work is interactive. collecting, recording and making records of activities such as zoom calls, sending emails, watching Netflix and trading NFTs. These digital activities are converted into visual puffs of CO2 which travel into a plan-filled biotope through a

small tube and the plants begin to drop, showing a visual representation of how internet usage impacts on the planet (Hahn, 2022). The installation itself is made from 95 percent reused steel, alongside television screens which are single-board computers that have a low energy waste, making the whole installation recyclable. The measurements of the internet's carbon footprint are highly reduced by the energy required to power the web, use of digital technology such as laptops and phones used to reach it, along with the machine room and computer systems which home all the details.

In *A Philosophy of Computer Art* under the title digital art it states,

What's new is that multimedia digital displays are generated one machine, an all-purpose representation device that deals with information in a common, digital code. By encoding text, sound, and still and moving images digital displays offer one stop multimedia (Lopes, 2010).

This installation (see figure 5) shows exactly where information is being collected and taken, controlled by the machine in each section, working together with data systems and individuals to make the work function correctly. Individuals are unable to envision the level of carbon footprint their everyday online activities are having however Huyghe makes this visually apparent as when people dial into the installation this machine makes notes of the location of the caller along with the location of the web they're using or used connected with their IP address. This furthermore then creates damage to the plant in the terrarium highlighted the damage of everyday online digital activities



Fig. 4: *Colour Meaning Chart*.

Both Huyghe and Roth's work are comparative in the way they display natural surroundings on television screens, Roth showing red landscapes of nature and Huyghe revealing bones of a carcass in the natural environment. Roth is taking pictures using an infrared camera which creates red images; the use of red to depict nature could be viewed as a warning sign for the viewer as red can be a sign for danger and alert (see figure 4). Through displaying them on digital devices such as phones, tablets, and monitors he is arguably reflecting on the damage being done to the natural environment through digital technology. He is also making a direct commentary on the amount of wire and cabling, situated within our world and within our nature. Evan Roth uses digital images next to 18th-19th century pieces of artwork (see figure 5) to show the

juxtaposition between nature painted and nature as infrared, perhaps to make a commentary on the damage caused to nature and the environment during this period. Huyghe and Biersteker however have both situated their works within the 21st century; Biersteker's work displayed in a gallery and Huyghe's is situated in nature, on an island.



Fig. 5: *Red Lines with Landscapes*

All the artists mentioned in this essay, work differently to each other, but they all commonly use digital technology to reflect on the natural environment and highlight the way online data is being collected. Huyghe uses frequency range as a reference point to the architecture of the internet and Biersteker uses internet connections through the algorithms, to determine how much CO₂ is used for each activity. Roth displays nature through the TV situated in a gallery surrounded by wires, making a direct visual connection between the impact of digital technology on nature; the viewer can see how

the technology fuels the images, and they are red indicating this as a warning sign. Huyghe alternatively displays nature through the television screen but situated within natural surroundings, whereby the wires are all hidden, more aligned with the modern world; the modern consumer does not see the impact of technology on nature as it is hidden just as it is within this piece. Biersteker is like Huyghe creating a visual connection for the viewer; the consumption of online content is directly linked to the plants in the terrarium creating CO₂ which will inevitably kill the plants just as the use of digital technology is destroying the planet.

In conclusion each image maker has created a piece that uses digital technology to highlight the impact of technological advancement on the environment, reflecting on how these digital technologies become part of everyday life and the consequences the internet has on individuals and society. My findings reflect on how individuals forget about the damage these technologies have on the plants and the health of ourselves. Rather than using digital technology to destroy our planet we need to use digital technology to improve, power and challenge the natural environment in a positive way. These artworks highlight the way we could improve the health of others and the planet by decreasing the usage of online activities and replacing it with outdoor activities. These artworks will make the viewer more aware of technology usage online, through using visual data collection to highlight the negative impact. Each piece draws attention to the damage being caused, highlighting an important topic and creating a moment for reflection and consideration of the unseen damages society's technological advancement has created.

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