

Viral Fictions: Navigating Time in Search of Memorial Markers for the Radio-Toxic Landscape of La Hague

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———— Nuclear events have inscribed the 20th century into a new chemical temporality that generally escapes our scrutiny due to radioactivity's invisibility. Radioactive particles keep falling back to earth since nuclear tests peaked during the Cold War; they form an iterative invisible presence that is coated in political invisibility. Through films and fictions, the paper traces haunted images that keep coming back. Two distinct geographies are weaved together; that of West Coast American deserts, where numerous tests were conducted, and that of the nuclear peninsula of La Hague, in France. The recurring metaphors of dust and mist not only characterise the two landscapes, but illustrate how radioactive particles literally journey and affect natural environments and activate the trope of contamination. *Viral Fictions* address the issue of creating a nuclear marker for La Hague's burial site. Underlying the fragility of material cultures and the aporia of projecting knowledge through deep time, the article creates a possible immaterial fictional nuclear marker for La Hague. Merging a set of references from local folk oral legends with the ability of fiction to transmit forms of knowledge and imaginary archetypes, *Viral Fictions* uses AI algorithmic software to generate speculative forms of fictions and visuals.¹

Keywords: nuclear history, nuclear aesthetics, nuclear marker, nuclear fiction, La Hague, artificial intelligence literature.

1 AHRC Funded Research, in partnership with Exeter University.



Agnès Vilette ——— *Viral Fictions: Navigating Time in
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Wandering around the peninsula of La Hague, at the north-western tip of Normandy in France, offers an intriguing experiment into different temporalities that operate simultaneously, continuously adjust their synchronicity, and display formidable durational discrepancies. Depending on the walk, the path taken, and the angle chosen while approaching the elevated plateau where La Hague's nuclear industrial refuelling plant² has been built, the experience varies greatly. The journey through small country lanes, nested in valleys, reveals an ancient landscape that has hardly changed for centuries, where pastoral land displays a gentle patchwork design of green fields framed by stone walls. The atemporal depiction clashes violently with the gigantic nuclear installations that were built in 1966, and have since then been extended into a vast nuclear industrial complex. Used radioactive fuels are reprocessed and stored at La Hague, while awaiting their final burials in deep geological nuclear waste repositories. Nuclear temporalities require complex durational readings. In 1994, the ANDRA repository site³, adjacent to the refuelling station, received its last nuclear waste parcels, and is now closed and will continue to be operational for the next 300 years. Time, dates, and durations are essential to approach nuclear epistemologies. In *Atomic Light, Shadow Optics*, Akira Mizuta Lippit⁴ reminds us that atomic history is bound by the logic of anniversaries, and framed by individual moments that turn monumental. Arbitrary instants are fixed in the chronic time of anniversaries. In his essay, Lippit pins down a series of such nuclear anniversaries, initiated by Willem Röntgen's discovery of X-Rays in 1895. Lippit traces the discovery of the invisible rays' legacy, through a ramification of dates converging to the first atomic bombs of 1945 that paved the way for the Cold War's deep time nuclear heritage.

In 1995, in celebration of the 50th anniversary of the end of WWII, the Smithsonian Museum in Washington DC, planned to exhibit

2 Since its opening in 1966 at the Northern tip of the Norman peninsula, the nuclear facility initially operated by the CEA, the Commissariat à l'Énergie Atomique, has changed its name several times. Previously known under the acronyms of Cogema, then Areva, the refuelling plant was renamed Orano in 2018, in a follow up of a succession to a succession of financial and technological scandals.

3 La Hague's nuclear cluster is considered one of the most nuclearised zones in the world. Displaying four different installations in a 25km radius, the refuelling plant is surrounded by a waste repository, an electricity nuclear plant where the third-generation reactor is currently being built and a nuclear propelled submarine construction site.

4 Akira Mizuta Lippit, *Atomic Light, Shadow Optics*, Minneapolis: University of Minnesota Press, 2005.

the refurbished cockpit of Enola Gay's B-29 bomber. However, in the face of growing pressure and protests, the show had to be cancelled. Nuclear anniversaries constitute sensitive memorial events when approached from different perspectives. Anniversaries also follow the radical transformations of nuclear history, from its utopian beginnings to the warmongering consequences of the bomb and the on going devastating nuclear ecocide. Furthermore, nuclear memorial events invite controversial interpretations that underline the polysemic understanding of the nuclear age. Saturated by dates, occurrences and media events, nuclear history is also heavily dependent on alternative readings of the structures of nuclear ontological's time. That of the deep time of transuranic isotopes, of the slow violence deployed at vast temporal scales, of nonlinear fold of time, of illnesses and psychological effects that operate at multiple and unexpected durations⁵.

The present essay addresses time and its memorial dimension from the perspective of radioactivity's ontological difference and its ability to deconstruct linear durational categories. To analyse such a complex set of metaphysical issues, the essay wraps itself around an art project that was developed and exhibited in December 2019 at Leiden University⁶, in the Netherlands. *Viral Fictions* was part of a group exhibition in which three different artists produced a nuclear marker for a chosen nuclear territory⁷.

5 Scientists and medical authorities refer to two distinct models of the impact of contamination on human's health. After being exposed to a high level of radioactivity, deterministic effects lead to radiation sickness and death, whereas stochastic effects, require decades before manifesting themselves into a complex and varied set of diseases.

6 The group exhibition *Topologies of Care* took place at Art Exhibition Kunstgang, Leiden University, Netherlands, 3 December 2019 – 31 January 2020; <https://www.universiteitleiden.nl/en/events/2019/12/de-kunstgang-at-leiden-university-topologies-of-care>.

7 *Viral Fictions* was exhibited with two other artistic nuclear markers, one of them by Grit Ruhland, a PhD student at the Bauhaus Art School, in Weimar, Germany. Her doctoral thesis investigates the long-lasting effects of uranium extraction in the Gera / Ronneburg territory, which used to be part of the former GDR. The uranium mined by the Wismuth company was sent to the USSR, where it fuelled the Soviet military atomic program. At the time, the region became the third most important uranium mining site in the world. Shortly after Germany's reunification, the mines closed, leaving behind post-industrial toxic landscapes that necessitated important decontamination programs. The second project created by Elise Alloin was realised in connection to the decommissioning programs of two nuclear plants, that of Strasbourg University's nuclear reactor at Schlitigheim, completed in 2009, and the current decommissioning of EDF Fessenheim's nuclear plant in the Alsace region.



My proposal explored the creation of an immaterial nuclear marker for the French nuclear waste repository site ANDRA⁸, in La Hague.

Exploring different strata of the nuclear marker's conception, the essay journeys between two different geo-political spaces, that of the USA and France, establishing connections between both nuclear nations from the perspective of their Cold War atomic legacies. Weaving together different

⁸ ANDRA is a near-surface nuclear waste repository, hosting low and intermediate level radioactive materials. Its existence is directly related to La Hague's refuelling plant. In the 1970, when industrial activity increased, the refuelling plant needed extra space for waste storage. An empty plot of land adjacent to the plant was fenced and radioactive waste started piling. Stricter security and health and safety parameters were introduced in the 1980, in a follow-up to the uncovering of several radioactive leaks. The plot was then converted into a site-specific repository, and covered by a large dome in 1991, while new monitoring systems were installed. ANDRA's site is particularly interesting, as its creation follows that changes of approach to the understanding and regulating of nuclear waste, which until the 1970, was classified as industrial waste, despite the long-life of some of the isotopes.

systems of anniversaries that have remained mostly uncovered, the paper interrogates the *longue durée* of radioactive waste and its future memorial destiny. In the first section, the paper interrogates filmic representations of the allegorical memory of nuclear fallouts in American deserts. Shifting to the Norman territory of La Hague, the second part explores another set of metaphors, that of the mist as a means to address the invisibility of radioactivity's agency and the uncertainties surrounding the irrevocably fading memories of La Hague's nuclear waste burial site. Departing from one of La Hague's oral legends, depicting a coastal grotto known as the Trou Baligan, the third section explores subterranean geologies, both as a material dimension of nuclear burial sites, and as an allegorical system of representations and narratives of the unknown. The final part concludes with a textual and visual nuclear marker conceived with AI software, which elaborates on speculative narratives for La Hague's present and future nuclear landscape.

I Media Memories: Desert and Atomic Dust

It is under the secret name of Trinity that the first atomic bomb was tested, one month short of the dropping of two bombs on Japanese cities. In deep secrecy, the Manhattan Project selected certain expanses of New Mexico's desert, where the first bomb was detonated at dawn on July 16, 1945. The atomic blast released radioactive fallouts at a planetary scale, marking the entry of the 20th century into the atomic age. Isotopes possessing a unique chemical signature, the first human-made radioactive particles to fall back to earth became geological chemical data, that five decades later, Paul Crutzen, a Nobel Prize climate scientist, came to select as markers and geological signatures for what he named the Anthropocene. Radionuclides were listed among other possible markers, which fall under the concept of the "Great Acceleration", emphasised by climate experts in the official report of the International Geological Congress that convened in Cape Town in August 2016. The "Great Acceleration" is informed by what the Bulletin of the Atomic Scientists lists as: "population growth, economic development, industrialisation, mineral and hydrocarbon exploitation, the

manufacturing of novel materials such as plastic, the emergence of megacities and increased species extinctions and invasions”⁹. Radioactive fallouts figure at the top of the list. Scientists disagree when it comes to picking a definitive date for the beginning of the Anthropocene era, though the 1945 Trinity test, which was followed by numerous atmospheric tests, peaking during the 1950s, engendered “a unique radiogenic signature captured in the layers of the planet’s marine and lake sediments, rock and glacial ice that can serve as a clear, easily detected book-mark for the start of a new chapter in our planet’s history.”¹⁰ The 2,053 nuclear weapons tests conducted between 1945 and 1998 form what scientists name “golden spikes.” The term, Waters goes on to explain, is “the standard accepted practice for defining geological time units (...)” and is used to “identify a single reference point, at a specific location, that marks the lower boundary of a succession of rock layers as the beginning of the time unit.”¹¹ Such standards, backed by scientists’ conceptual lexicon and definite stances, aim at identifying and dating specific thresholds. Such an understanding runs contrary to deep time conceptions where linearity and durational reference events are deconstructed in favour of durational systems structured by multilayered entangled folded times. Such temporal discrepancies are analysed in Jussi Parikka’s essay *The Anthrobscene*, where he demonstrates that stratifications, concretions, layers of time, and materialities are combined with modern technological media devices. Opposing the concept of a single unified view of history informed by progress and evolution, he underlines the existence of different time scales that rely on history’s non-linear dynamics. He provocatively points to millions of years of nonlinear stratified history where, within geology’s inherited past¹², technological media constitute an added layer among others¹³.

The term “downwind people” appeared for the first time in 1980, in the American *Life* magazine. It pointed to a whole set of territories and populations of the South West hinterlands mainly populated by displaced

⁹ Colin N. Waters, “Can Nuclear Weapons fallout mark the beginning of the Anthropocene Epoch?”, in: *Bulletin of the Atomic Scientists*, Vol. 71 (3), 2015, p. 46 – 57.

¹⁰ *Ibid.*, p. 47.

¹¹ *Ibid.*, p. 48.

¹² Jussi Parikka, *The Anthrobscene*, Minneapolis: University of Minnesota Press, 2015, p. 15.

¹³ A media history will become relevant later in this essay, when touching on Artificial Intelligence, as its software and network rely on rare earth geological materialities.



First Nations communities living in reserves. The First Nations' lands were reclaimed by the federal authorities during the Cold War's nuclear military programs, and their settlements are often found close to nuclear sites. In America's nuclear wastelands, the memory of radioactive fallouts has embodied itself literally and metaphorically in desert dust. Displaced by the wind, propelled by desert storms, radioactive dusts inform the unravelling memory of radioactivity's slow violence¹⁴. Dust also penetrates a whole set of imaginary realms. It lingers within the yellowish and ochre deserts Baudrillard¹⁵ wrote about. It haunts the landscapes Rebecca Solnit describes in *A Field Guide to Getting Lost*¹⁶, while journeying across deserted lands to

14 Rob Nixon, *Slow Violence and the Environmentalism of the Poor*, USA: Harvard, 2011.

15 Jean Baudrillard, *Cool Memories*, London: Verso, 1992.

16 Rebecca Solnit, *A Field Guide to Getting Lost*, London: Penguin, 2005.



revisit earlier memories of the anti-nuclear protests she attended during the 1970s and 1980s.

Dust is the ideal catalyst to demonstrate the nonlinear agency of radionuclide fallouts. At the threshold of visibility, isolated infra-sensible grains agglomerate to create a vast land mass. Dust and radioactivity share essential uncertain and evasive characteristics: their common ability to cover great distances and to model ephemeral toxic landscapes in the form of ever-changing dunes. American's hinterland desert-scapes have defined the country's pioneering mythology. As such, the atomic program can be perceived as the ultimate scientific pioneering spirit. Dust haunts America's atomic history, particularly its unconscious and repressed scientific history.

As more atmospheric atomic tests were conducted during the Cold War, meteorological tracing applications helped to design modelling systems for wind patterns and the weather planetary system, drawing attention to the global geographical distribution of radioactive fallouts. Climatology studies demonstrated the global dissemination of radioactive fallouts which later served as a scientific foundation for convincing the nuclear states to draw the Partial Test Ban Treaty in 1963. The treaty ended atomic atmospheric tests, but fell short of stopping them, as they moved underground. Dust informs the American deserts that constitute the quintessential background to the hegemonic narrative of the great American wildness and frontier ethos. The nation-building mythology narrates itself within dusty's landscapes, as ubiquitously demonstrated in Hollywood movies.

It took a second-grade feature film to successfully encompass the Cold War's atomic legacy, the Hollywood cinematographic machine and the iterative encounter of dust, memory and radioactivity. *The Conqueror*¹⁷ was Howard Hughes's latest production. Directed by Dick Powell, in 1956, for RKO Hollywood's film studios, the feature film was shot in Utah. The film crew lived and worked on site for several months, close to Yucca Flats, a few hundred kilometres from the Nevada Test Site, where the military tested 126 atomic bombs between 1951 and 1963. The colour cinemascope feature film *The Conqueror* narrates Genghis Khan's epic adventures. John Wayne plays the Mongol emperor, whereas the local First Nations were recruited as extras to play the warriors of his armies. After months spent in the Utah desert, Dick Powell organized 60 tons of desert sand to be transported to Culver City Studios, where technicians recreated desert storms with the help of huge ventilators. The film turned out to be a complete financial and public failure. Years after its release, Howard Hughes tried to erase the film's posterity, destroying most of its rolls. Despite his efforts, the film's faded artistic memory turned into a Cold War *memento mori*. It gained recognition for the dramatic statistics that unravelled during the three decades following the film's release. During the 1980s, 91 participants and crew members out of the total of 220 people developed cancers. In the following years, 46 crew members died. Susan Hayward, the main actress was among them. So was John Wayne.

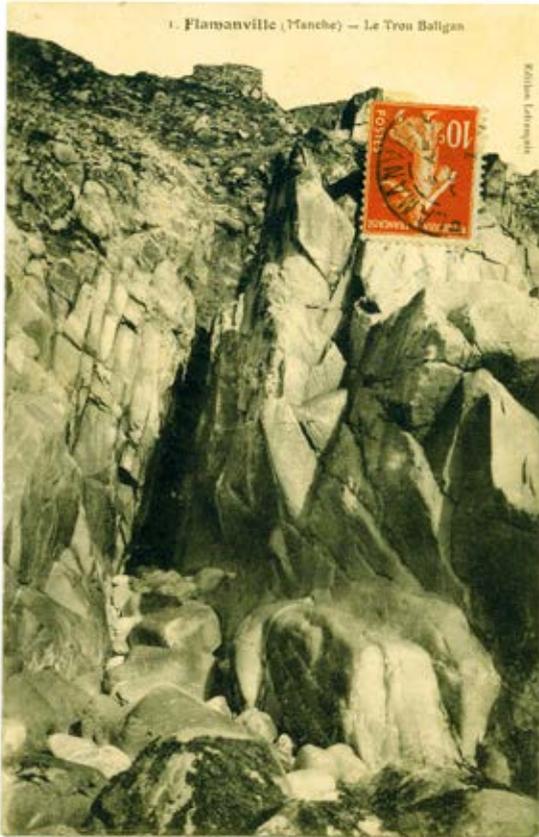
17 Dick Powell, *The Conqueror*, USA: RKO, 1956.

It is troubling to consider that out of the vast amount of doomsday films produced by Hollywood that obsessively addressed the end of the world nuclear catastrophe, it is a fairly unknown film depicting the hubristic conquests of an ancient Mongolian figure, that came to symbolise America's atomic disasters. Shot close to the geographical nuclear heartlands of secret military test sites, the film recorded a tangential, invisible and suppressed part of America's military nuclear history. A repressed history was successfully immortalised by Hollywood's media machine as an ultimate allegory. Unlike pockmarked and flared films resulting from a direct contact with high levels of radioactivity (e.g. those shot during and shortly after nuclear accidents¹⁸), *The Conqueror's* radioactive dust is embodied chemically and allegorically. Dust features in numerous scenes as horse-drawn warriors gallop through vast desert plains, followed by dramatic dust clouds. Filmic dust clouds form a memorial celebration of sorts, which can be continuously replayed into the future. *The Conqueror* succeeded in merging together America's military history and cinematographic industry in an uncanny way. The feature film captured literally and allegorically the ontological nature of radioactivity's invisible and pernicious contamination, its ability to deterritorialise itself, to fluctuate in space and time, to extend to vast time scales and to journey geographically and symbolically, as an imaginary repressed force. "When it comes to nuclear landscapes" writes Karen Barad in *Arts of Living on a Damaged Planet*, "loss may not be visibly discernible, but it is not intangible. (...) Loss is not absence but a marked presence, or rather a marking that troubles the divide between absence and presence."¹⁹ The slow violence unleashed by atomic tests operates in various subtle ways, escaping visibility; its ubiquitous contamination coats itself in political secrecy, while it remains capable of reconfiguring and embedding itself in uncanny alternative narratives.

Utah's desert dust still floats around, falls back to earth, lingers and touches down in time and space.

¹⁸ Volodymyr Schevenko, *Chernobyl: A Chronicle of Difficult Weeks*: Documentary film, Soviet Union: 1987.

¹⁹ Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Burbandt, *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, Minneapolis: University of Minnesota Press, 2017. Karen Barad, "No Small Matter: Mushroom Clouds, Ecologies of Nothingness, and Strange Topologies of Spacetime-mattering", in: *Arts of Living on a Damaged Planet*, Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Burbandt, eds., Minneapolis: University of Minnesota Press, p. 106.



II Norman Mist

Pushed by Western winds, mist sweeps across the French Norman peninsula of La Hague. Exposed to the sea, the elongated piece of land is continuously wrapped in drizzle, low heavy and grey skies coalescing with the verdigris tinge of the sea. The thin rain, or “crachin” in the local Norman dialect, penetrates all. Its velocity and ubiquitous presence veils the landscape, the buildings, the nuclear plant, the adjacent nuclear waste repository, and the overwhelming low skies. Its soft greyish texture wraps the vast military-industrial complex of La Hague’s refuelling plant, its extended installations spreading for miles within elevated electric fences, at the heart of the wild and lonely peninsula.

In 2015, ANDRA²⁰, the French agency that operates and monitors France's nuclear waste, launched an open call for artists, inviting the participants to design nuclear markers aiming at signalling the burial site for future generations. ANDRA is by law subjected to ASN's²¹ 1991 regulatory safety rule stating that radioactive waste stakeholders bear the responsibility of conserving and transmitting the memory of burial sites and their contents. The safety rule insists on ways to prevent "the risks of site's intrusions"²². Each year, several art projects are selected, though they have never been produced, or exhibited. The markers reflect upon and question the possibility of protecting the memory of the sites for long periods of time. Displaying inventive strategies to overcome radioactivity's invisibility, some projects rely on the monumentality of architectural markers. Most projects struggle with material culture's inherent fragilities when it comes to fixing the forms of communication and knowledge in the face of far-fetched future' uncertainties. Each of the art pieces negotiates differently the delicate requirement of inventing communication strategies capable of addressing the *longue durée* of buried isotopes, such as plutonium-239, whose half-life is 24,000 years. Unfamiliar and inhuman timescales defy memorial and heritage conservation. Monuments, cenotaphs, pyramids, and megalithic settlements manifest the remnants of forgotten past civilisations, while underlining our limited knowledge of the culture and civilisation that shaped them. The markers of a nuclear waste repository's solicit forms of reversed future archaeological approaches. "How will future societies understand our past remains?" ask archeologists Cornelius Holtorf and Anders Högborg²³, who have been working alongside scientists to develop possible markers for nuclear burial sites. Their archaeological practice provides an interesting set of tools to approach human and cultural developments through time, but alongside, it leaves numerous unanswered questions regarding the means of projecting lasting information in relation to half-life of some transuranic isotopes'.

20 Created in 1979, ANDRA (National Agency for Nuclear Waste) is the French institution operating the industrial and commercial decisions regarding nuclear waste.

21 ASN (Nuclear Safety Authority) is an independent French administrative authority set up by law in 2006 to guarantee the transparency and safety of French nuclear installations.

22 ANDRA's website, <https://www.andra.fr>.

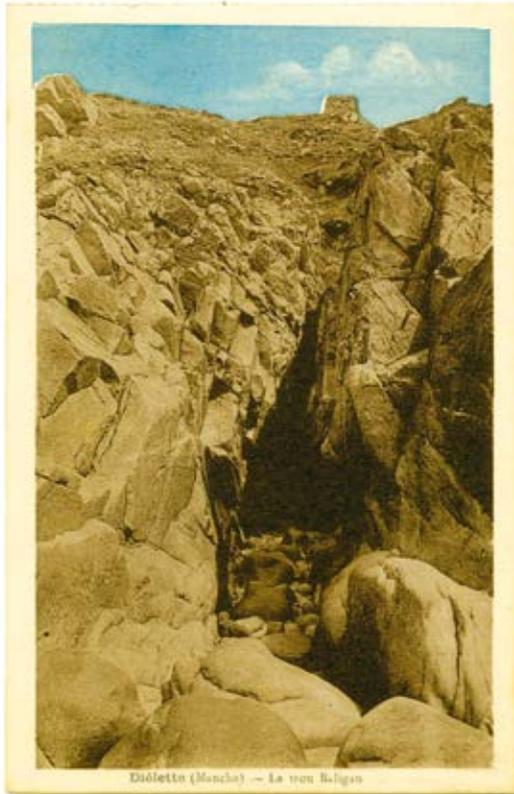
23 Cornelius Holtorf and Anders Högborg, "Archaeology and the future: Managing nuclear waste as a living heritage", in: *Radioactive Waste Management and Constructing Memory for Future Generations: Proceedings of the International Conference and Debate*, 15–17 September 2014, Verdun, France, Paris: OECD Publishing, 2015, p. 97–101.

La Hague's nuclear waste's repository hosts "low and intermediate level waste"²⁴ and, as is indicated on the ANDRA's website, "contains mainly short-lived radionuclides". The facility is meant to operate for 300 years, though, the blurred and controversial history of the site's construction, particularly during the 1980s, when radioactive waste underwent a new system of classification, points that this low radioactive waste, includes disputed amounts of plutonium as well as alternative radiotoxic isotopes whose half-life extends far deeper in time. "Something from the future is peeking out, and it is just too big for our minds. Too huge for us to be handled" writes Svetlana Alexievich in *Chernobyl Prayer*²⁵. The 300-year fixed time frame heralded by ANDRA corresponds, for La Hague's site as well as for any other nuclear waste repositories to the longest proven technological resistance of structures and materials. Crossing the 300-year boundary, scientists cannot guarantee the security and safety of the installation. When reading about the architecture and technology of nuclear waste repositories', one becomes aware that research for new solutions is ongoing. The constant techno-scientific R&D developments also serve as a justification for the exponential production of nuclear waste. Nuclear industry, as a whole, is sustained by the conviction that new technological solutions will materialise in the years to come; new materials will be created, new infrastructures will be built, as a way to provide an extended life span and augmented impervious qualities to buried radioactive materials. When peering into the past, 300 years do take us to material cultures that are still with us. Wood, iron, lead, and copper belong to material cultural histories that still surrounds us. Turning our gaze towards the future, one understands that rare earth elements and ore have started shaping our technological digital future. Though, when it comes to building reliable hermetic and secure infrastructures for nuclear waste, the materials have not evolved much: lead, rock, concrete, glass, and water are still in use. Directly embedded within a familiar set of material culture, the physical properties of such materials tend towards entropy, erosion, and disappearance.

The 300-year time-lapse of La Hague's repository site directly corresponds to the safety barrier of scientific and industrial installations

24 ANDRA's website, <https://www.andra.fr>.

25 Svetlana Alexievich, *Chernobyl Prayer: A Chronicle of the Future*, London: Penguin Books, 2016, p. 141.



Dióletto (Mancha) — La trou Belgen

that guarantee a technological and physical resistance against the slow seeping of contamination with radioactive fluids'. Therefore, when addressing long-lived radioactive waste's sites, which are required to outlive the 300-year' time limit, the only remaining technological solution consists of using the natural geological barriers of the underground substrata. *Into Eternity*²⁶, Michael Madsen's documentary film provides a thorough analysis of the geological implications of selecting a site for the construction of nuclear waste repositories. Clay was elemental when the Meuse region in the East of France was selected for Cigeo, a deep geological disposal facility in Bure, currently under construction²⁷. In Madsen's film, shot in Finland, granite bedrocks were selected to host the Onkalo site.

²⁶ Michael Madsen, *Into Eternity*, Denmark: Films Transit International, 2010.

²⁷ The waste stored at La Hague's ANDRA is meant to be buried at Bure, though the opening of the deep geological disposal site keeps being postponed, as technical problems keep occurring. The time-scale was forced to undergo some adaptations, whereas intermediary solutions became long lasting ones.

Defective confinement industrial systems, ageing air-cooling networks, degrading materials, soil erosion and humidity seeping into underground installations and, penetrating the layers of geological strata, merge in progressively undermining hermetic techno-scientific installations. The overall responsibility of maintaining a solid boundary between nuclear installations and inhabited landscapes or natural environments falls back to what scientists and geologists call, environmental passivity. It is understood as the ability of a mountain²⁸, a valley, or a bay to solidly and permanently anchor itself in terrestrial geography and to litigate geological changes. Nature and geological materialities remain the last citadel.

Sitting next to the refuelling nuclear plant, the ANDRA site in La Hague has a unique architectural presence. Initially dug to allow waste barrels to be piled up, it was eventually roofed in the early 1990s, to protect the waste against the customary rain familiar to this part of Normandy. The plant is characterised by its chimneys, the vast cubicles of its warehouses, its lines of low-built office blocks, and its abstract gigantic non-descriptive buildings. The ANDRA's vaults, unlike the nuclear plant's industrial settings, display a less obtrusive form of architecture that blends with the surrounding landscape. However, its vast elevated cubist shapes, covered by pristine green lawns, stand out by their unnatural geometrical lines, enclosed by protective fences. Lost within the mist, the eerie grass structure becomes a strange silent monumental megalith sleeping its way towards the 300 years to come.

Drizzle keeps falling. Rain drips along the elevated slopes. The small streams journey downward the valley, towards the sea.

III Vertical: Nuclear Cavities

The subterranean world of nuclear waste, hidden in cavities and underground architectures, best displays the deep secrecy of nuclear history. A vertical analytical scrutiny suits perfectly the nuclear industrial cycle. From uranium mine digging to underground nuclear tests and to the final destination of nuclear waste in deep subterranean tunnels, the underground

²⁸ The Yucca Mountains were chosen to host one of the most important nuclear waste repositories in the USA. In *Tainted Deserts*, Kuletz uses the concept of "sacrificial landscape" in reference to the wastelands of American's atomic test sites. Valerie Kuletz, *The Tainted Deserts, Environmental and Social Ruin in the American West*, New York: Routledge, 1998, p. 132.

has become the topoi of both nuclear techno-industry and anxieties²⁹. More than any other creative industry, Hollywood has addressed Don DeLillo's provocative declaration found at the opening of one of his novels: "Everybody wants to own the end of the world."³⁰ Hollywood films keep reclaiming that narrative, as nuclear disasters' eschatology has become an ideal theme for disaster movies. The Cold War's feature films, with their taste for ready-made metaphors, enlisted grottoes and cavities in their science-fiction's depictions of nuclear apocalypses unravelling with the sudden apparition of gigantic irradiated monsters bringing chaos into human life. *Them!*³¹ or *Attack of the Crab Monsters*³² figure among a long list of SF films, in which, naive depictions of deep anxieties of the nuclear age are reflected by Manichean allegories. In such films, the alienating nature of radioactivity's invisible contamination is informed by a monstrous bestiary. In Roger Corman's *Attack of the Crab Monsters* of 1956, a group of scientists lands on a small Pacific island in search of a team of scientists which has mysteriously disappeared. As they search the island, the scientists come across a vast network of caverns along the seashore. At night, they are awakened by strange noises coming from the sea. The sounds are produced by two giant mutant telepathic crabs who shelter in the grotto's depths, readying themselves for nocturnal rampages on the island's new intruders. The doomsday's narratives are unrestingly creative in inventing renewed monstrous representations for the uncanny presence of radioactivity, which permeated society's imagination and fears during the Cold War era.

The surrealist encounter of telepathic crabs, lost physicists and a small Pacific island illustrates what Jacques Derrida identifies as the "fabulously textual"³³ quality of atomic apocalypses. Nuclear apocalypses are widespread among speculative fictions that keep endlessly renewing narratives about human societies. During the Cold War, as the USA and USSR were caught in the irrational geopolitical equilibrium of nuclear deterrence,

29 "Underground Studies" underline how a whole set of concepts connect subterranean architecture, psychoanalysis, literature, and urban studies into powerful assemblages that are particularly relevant to the Cold War era. See Stephen Graham, *Vertical: The City from Satellites to Bunkers*, London: Verso, 2016.

30 Don DeLillo, *Zero K*, London: Picador, 2016.

31 Gordon Douglas, *Them!*, USA: Warner Bros, 1954.

32 Roger Corman, *Attack of the Crab Monsters*, USA: RKO Films, 1956.

33 Jacques Derrida, "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missiles)", in: *Diacritics: Nuclear Criticism*, Vol. 14, No. 2, Summer, 1984, p. 20–31.



a unique mix of atomic fears and phantasmagories took hold of cinema and popular culture in general. The nuclear apocalypse as an imaginary phantasmagorical realm succeeded at fuelling modes of communication, fictions, imaginary realms, myths, and unconscious fears for an event devoid of any preceding reference.

In La Hague, the metamorphic rocks of the past geological eras have sedimented schismatic and granitic soils, which make the west part of the peninsula one of the oldest geological soils in the territory of France. The mineral landscape is formed by an elongated plateau. The East coast slowly descends to the shore, whereas the west coast falls abruptly into the sea. There, the coastline is formed by many creeks with small sandy beaches framed by steep rock cliffs, furrowed by pedestrian paths overlooking the Channel. Several grottoes lie along the west coast. They are known to have been used for centuries by smugglers hiding their stolen loot from shipwrecks. One of the grottoes is missing. It was destroyed when Flamanville's two nuclear reactors were built in the 1970s. The grotto was known as the Trou Baligan. Early photographs or old postcards depicting its cathedral size entrance can still be found on the internet. An uncanny local legend



related to the grotto. Like a large amount of oral literature in Europe, it was written down at the end of the 19th century by a local historian named Jean Fleury, who published a collection of oral myths and stories under the title *Littérature orale de Basse-Normandie* in 1883³⁴. Capturing the territory's locus, its customs, and unique geography, La Hague's legends recall the hardships of life in these isolated lands populated by fantastic beasts and spirits that forged La Hague's superstitions.

The legend of the Trou Baligan is quite fascinating, as it narrates an encounter of two worlds, paganism and early Christianity, in the recollection of St Germanus the Scot's arrival in the west part of Normandy to convert local population during the 5th century. The most intriguing dimension

³⁴ Jean Fleury, *Littérature orale de Basse-Normandie*, Paris: Maisonneuve, 1883, p. 15.

of the legend lies in the depiction of the dragon that lived in the grotto, and would regularly destroy the villages and cultivated fields to feed itself. To stop the destruction, the inhabitants decided to bring a village child to the entrance of the grotto. It is during one of these sacrificial visits to the shore, when villagers were trooped at the entrance to the grotto, that the dragon was killed, according to the legend. As a young boy was pushed towards the entrance, the villagers noticed a distant figure of a man standing on a wheel that seemed to be floating above the sea. Having landed on the shore, the saint used his bishop cross to destroy the dragon.

It is from the depth of the underground, where nuclear waste is now buried that a whole set of ancient imaginary metaphors originate. In the case of the Trou Baligan's legend, the striking figure of the dragon creates a strange encounter between fiction and reality. The lost grotto has now been replaced by one of Flamanville's two running reactors³⁵. The fictional powers of metaphors and imaginary projections perform an uncanny encounter, where nuclear's futurity can be explored from the perspective of ancient oral legends.³⁶

IV AI's Black Box and Speculative Nuclear Futures

Viral Fictions was exhibited at Leiden University during the autumn of 2019, as part of *Topologies of Care*³⁷, curated by Anna Volkmar from Leiden's Environmental Humanities's Department. *Viral Fictions* featured works of two other artists, Grit Ruhland and Elise Alloin. The three art

³⁵ EDF's third-generation reactor is currently built at Flamanville, despite the fact that its budget was tripled from the initial €3 millions to €9 millions and successive delays that have postponed the expected initial opening in 2012 to 2023. The EPR technology was sold to China, which successfully built a plant with new reactors at Taishan, near Canton. The Chinese reactor has been nicknamed "Hualong", the dragon.

<https://www.edf.fr/en/edf/the-first-of-two-epr-reactors-at-china-s-taishan-nuclear-power-plant-enters-into-commercial-operation>.

³⁶ In *Tainted Deserts*, Valerie Kuletz analyses a similar case regarding the Yucca Mountains, where the US government had planned to develop a nuclear repository. The lands, as well as the mountains, are known to be sacred for several First Nations groups, such as the Western Shoshone and, the Southern Paiute, who believe the mountain to be a point of passage between the Dead and the Living. Based on spiritual visions, the mountains are also known to shelter a giant snake that threatens to wake up if the mountain gets disturbed. The common patterns of oral myths and geographical nuclear similitudes weave fascinating connections between far away geographical territories that are defined by their nuclear interconnections.

³⁷ "Topologies of Care", Art Exhibition, Kunstgang Leiden University, Netherlands, 3 December 2019 – 31 January 2020.



pieces interrogates the creation of a nuclear marker for three different sites sharing a common Cold War nuclear legacy. Elise Alloin has been working in Alsace, in the east of France, by the Franch-German border where the Fessenheim nuclear plant is currently being decommissioned, whereas Grit Ruhland has just submitted her PhD at Bauhaus University Weimar, exploring the legacy of uranium mining in East Germany, where the German-Soviet company Wismuth operated one of the largest uranium mining consortium of the planet. Albeit the mines closed in 1991, the ex-GDR region is scattered with radioactive tailings embedded in the landscape. *Viral Fictions* explore the fictional dimension of the nuclear landscape of La Hague by

telescoping together the ancient oral myths of the Trou Baligan with texts and images generated by AI software in order to reactivate contemporary forms of myths for the Norman nuclear territory. The project operated at two levels, that of textual narratives and that of computer-generated images. In both cases, the past, the present and the future coalesce in the midst of archival texts and images appropriated by the generative powers of the neuronal networks of AI algorithms that feed on and transform masses of information to produce alternative speculative images and fictions.

Digging into mythopoetic texts, such as the ones gathered by Jean Fleury in La Hague, served to connect ancient oral traditions where transmissions and knowledge had been successfully passed down over long periods of time. Songs and legends, Kuletz writes, provide “through narrative techniques crucial elements in the transmission of knowledge about the environment and the place”. Kuletz considers that legends “serve often as in German folk stories as precautionary and cautionary narratives”³⁸. These ancient forms of communication can be understood as pedagogical means to transmit social and moral precepts. As is often the case, legends depict vivid secular relations that people have developed with the land they live in. Myths constitute forms of savage epistemologies, which Claude Levi-Strauss in *The Savage Mind*, opposes to western scientific forms of knowledge. The anthropologist assesses the meaning and validity of such ancient forms of narrative knowledge: “Their principle value is indeed to preserve until the present time the remains of methods of observation and reflection which were precisely adapted to discoveries of a certain type (...). This science of the concrete was necessarily restricted by its essence to results other than those destined to be achieved by the exact natural sciences but it was no less scientific, and its results no less genuine. They were secured ten thousands years earlier and still remain at the basis of our civilisation.”³⁹ Oral fictions also operate as a direct response to the weakness of material cultures’ to provide a certainty that knowledge and information do not disappear. The simple narrative of legends, as well as their universal allegories and their ability to navigate time offer alternative means to invent nuclear markers. Buildings crumble, archives disintegrate, languages disappear,

³⁸ Valerie Kuletz, *op. cit.*, p. 209.

³⁹ Claude Levi-Strauss, *The Savage Mind*, Chicago: University Chicago Press, 1962, p. 15.

and monuments get buried in overgrowing plants, whereas oral legends navigate their way through time.

Legends and oral stories morph and change, adapt themselves to various epochs, while still sustaining ancient forms of information and knowledge. They display resilience and duration. Oral traditions, as Jairus Victor Grove writes in *Savage Ecologies*, “compress and stretch times in their existence”⁴⁰. At the threshold of the 19th century, while the Grimm brothers and numerous local European historians collected oral traditions that were progressively disappearing, the editorial project assured their preservation. It also consequently halted their organic proliferation. *Viral Fictions* work at activating the dynamic of La Hague’s oral legends and at providing a renewed set of fictions for the nuclear landscape. It also reconnects the fictional threads that embody the territory’s nuclear legacy with its ancient psycho-geography and imaginary dimensions. Conflating fictional threads in which nuclear reactors, dragons sheltering in grottoes, sacrificial rituals and metaphoric salvations converge, belongs to Anna Tsing’s method at creating “a rush of stories”⁴¹. She contends that the production of narratives is a way to approach the toxic landscapes we inhabit, with their layered histories and ecologies. La Hague’s *Viral Fictions* offer a possible reading of the landscape while blending together imaginary projections and speculative legends that have navigated time to deliver narratives where the transgressive presence of dragons, nuclear waste and nuclear reactors merge within the fictional ramifications of the landscape’s future deep time radiotoxicity.

Fictions are able to deploy iterative and descriptive creative systems that can interweave various forms of knowledge. Versatile and able to adjust to different eras, fictions address the era’s fears and zeitgeist, which morph into allegories and mythological expressions. Relying on polysemic structures and readings, fictions are able to inhabit complex temporal layers. They also shape memory archives of the world and human civilisations, as well as offer a vertiginous ability to formulate speculative projections for times to come. Yves Citton has analysed the power of literature to anticipate future events in what he considers “the clairvoyance of fictions”; he compares it to

⁴⁰ Jairus Victor Grove, *Savage Ecologies, War and Geopolitics at the End of the World*, Durham: Duke University Press, 2019, p. 14.

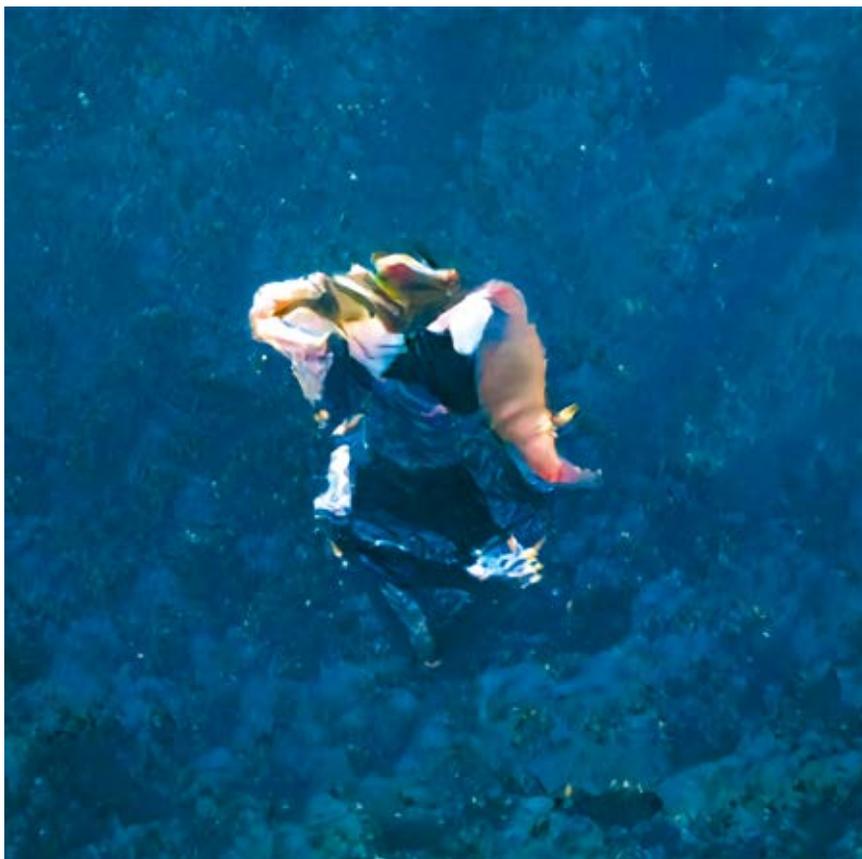
⁴¹ Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalism Ruins*, Princeton: Princeton University Press, 2017, p. 37.



a sort of seismographic attention to the world, a fascinating ability to register fault lines and contemporary fractures. For him speculative novels “synthesise a heterogeneous set of sensitive and affective information, that neither prospective experts (usually overdosing on numbers and data) nor the most powerful computational machines (too stupid to discern where their benefit lies) succeed at filtering with the same refined intuitive intelligence.”⁴²

Viral Fictions explore the means of inventing narratives for the future legendary realms of La Hague’s radiotoxic landscape. For that purpose, it merges archival texts and images, such as the Trou Baligan’s legend that served as a blueprint for producing an alternative computer

⁴² Yves Citton and Jacopo Rasmi, *Génération collapsonautes: Naviguer par temps d’effondrements*, Paris: Seuil, 2020, p. 67. Translation by the author.



generated legend. Relying on algorithmic systems and AI, *Viral Fictions* offer an immaterial narrative marker which explores threads of narratives and images. It works at recouping, shifting, contaminating, encoding and generating texts and computerised images from the depth of AI's black box. The legend's computerised version was generated with the help of *Talk to Transformer*[™], which autonomously generates paragraphs from a submitted sentence. The generative text program proposes strata of texts that diverge and conflate around an initial set of sentences. To obtain the AI's textually generated legend entitled "Unfortunately, However, He Too Had a Past Life", sentences from the original legend were fed to the AI software. Relying on the semantic and syntactic's principle of semantic

contamination, the computerised legend used a preset system of references and knowledge. AI programs are trained on the foundation of statistical probabilities; therefore, they replicate digested archetypes. Thus, their programs blend together a set of predicted contents with the variantology embedded in fiction writing, eventually generating uncanny encounters, strange references, and unpredictable possibilities. Functioning at the interconnection of classification, software training, and data crushing, the AI version of the legend offers a strange layering of randomness, metaphors, hypothesis, and information that forged speculative forms of imaginary textual and visual futurities. Structured by its distributed semantic networks, AI image software, when fed with the word “nuclear”, retroactive semantic loops that heavily rely on post-apocalyptic archetypal images. “Images are remarkably slippery things” write Kate Crawford and Trevor Paglen in *Excavating AI*, “laden with multiple potential meanings, irresolvable questions, and contradictions. Entire subfields of philosophy, art history, and media theory are dedicated to teasing out all the nuances of the unstable relationship between images and meanings.”⁴³ The images produced with the help of AI stay at the threshold of representation, they render visible the programming they operate from, as if exposing their inner infrastructure. Those images also embody alternative meanings and knowledge, which directly depend on the inner anterior programming of its algorithms, which at their deepest level, activate independent informed decisions, that experts designate as AI’s black box, an unknown entity that displays its free agency. Deconstructing the archaeology of AI image vision programs, Crawford and Paglen extirpate the deep functioning of networks that operate as neuronal networks organised on classification and taxonomical systems, thus disclosing the orientated epistemologies of their programs.

The text and images of *Viral Fictions* offer an uncanny mix of metaphors, images, and paragraphs that operate in the continuum of my initial discovery of the entangled connections between a territory, its legend and past history, and its nuclear developments in the 20th century, which have penetrated the *longue durée* of the nuclear toxic legacy embedded in the subterranean layers of its geology. The destruction of the Trou Baligan’s

⁴³ Kate Crawford and Trevor Paglen, “Excavating AI, The Politics of Images in Machine Learning Training Sets”, in: The AI Now Institute, NYU, [online], 2019, [cited 2020-05-31], <https://www.excavating.ai>.



grotto that gave way to the building of Flamanville's nuclear reactors, activated a series of interconnected encounters that play on techno-scientific nuclear installations colliding with an oral myth. Such literary and phantasmagorical connections align with the French poet Verlaine's assertion that "all the rest is literature."⁴⁴

Conclusion

The AI legend and images of *Viral Fictions* succeed at bringing together various temporalities: the archives that fed the software, the contemporary issues of radiotoxic landscapes awaiting nuclear markers able to navigate deep time to deliver a set of knowledge, and, finally,

⁴⁴ Paul Verlaine, "Art Poétique", in: *Jadis et Naguère*, Paris: Livre de Poche, 2009. Translation by the author; "Et tout le reste est littérature".

machine-generated speculative imaginary forms. The art project aims to journey along the uncertainties of nuclear times and to encompass the fault lines of its legacy, in order to creatively engage with nuclear eschatological's imaginary futures. Revisiting the Cold War filmic representations and, ancient regional oral traditions, while inviting contemporary and speculative modes of investigation entails the creation of alternative narrative threads. *Viral Fictions*, an immaterial nuclear marker, travel through the past, the present and the future as a fictional vessel, approaching La Hague's nuclear landscape as a fictional territory, where formless uncertainties reign as haunting presences. As scientific and industrial solutions are still to be invented to guarantee a safe and secure future, fictions and speculative narratives help us to think about our relation to radiotoxic landscapes. *Viral Fictions* reflect on new categories of knowledge which form what Georges Bataille designates as forms of non-knowledge that forces us to think and not to know. The immaterial nuclear marker is informed by vestigial forms of incomplete memories, and sustained by the power of fictions and narratives. It transports, through time, the uncertainties of the nuclear landscape of La Hague by penetrating new layers of digital strata and computerised algorithmic networks.

Desert dust, floating and displaced, further deterritorialises itself in the form of mist. Low grey cloudy skies ready to unleash rain on the Norman peninsula reconfigure as insidious digital bits that circulate in a vast circuitry of networks. A digital drizzle able to journey in time...



Unfortunately, However, He Too Had a Past Life
AI GENERATED TEXT

The Trou Baligan opens onto the cliffs that form the Nez de Flamanville, a tipping point of the Cotentin's Norman peninsula. The name of the area's derives from the Latin word 'thorns'. The coastal cliffs and limestone of the peninsula offer a wonderful backdrop for the spectacular view. Two massive suspended rocks form a sort of vestibule. One is a massive boulder, almost two metres tall and the other a smaller boulder 20-30 metres in diameter. The stone is encased in a blackened quartzite crystal that has darkened over the time. As I stood in the opening of the cave, I took in the scene of the cavern, surrounded by rocky cliff walls and mist. There were some odd-looking stalagmites, and it looked as though a great waterfall had once flowed out of the cavern's walls, but now the rocks had collapsed and the water was just flowing back in. In the entrance itself there used to be a huge arch, with a large brass plaque that says: "Moses the

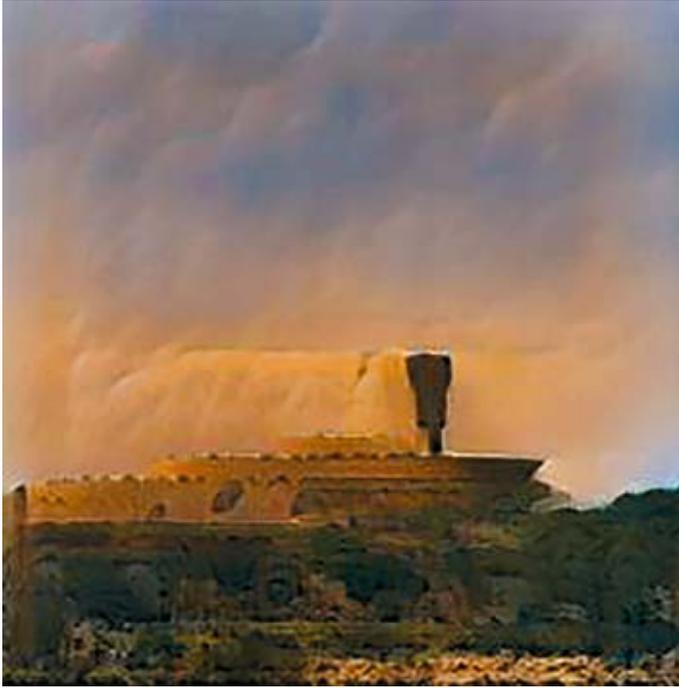
Elder, the first Jew, who built this grotto.” But the plaque’s been stolen and the grotto’s been transformed into a very big, ugly concrete block.

A gigantic dragon, a real monster had settled in the cavern a long time ago. This monster was also known as a ‘Demon’. And it was a monster that did not attack with physical force. Instead, it relied on its high speed, and the power of its breath to deal damage. The giant head’s dragon opened up and an enormous shadow shot out of the mouth, it was a demon with the appearance of a giant winged monster. The monster that resembled a demonic dragon descended from the sky, and it roared like a giant beast. And then, the demon came down on the ground.

Every week, one child would be designated and brought to the cavern. If the boy survived his ordeal, the next one was given his gift. This was the story of the first child. He survived his encounter with the dragon and was given a toy car. The second child was a boy from a nearby village of the same name. He was taken to the dragon. He was given a small stick and his toy car, but did not survive. The third child survived the encounter, but his mother died, and his father was killed in his arms.

One morning, as the villagers brought the latest child to the dragon, as they were about to leave, they noticed, far away, on the sea, an unusual vision that caught them all and brought them to the cliff’s edge. It was an alien city in the depths of space, a huge dome, an enormous building, with a massive clock tower. From the top of the dome came the sound of strange music, the sound of machines. It was a great, wide building, with many floors, and it was built of metal and glass, and it was painted with a strange pattern. There was a huge door, through which came the voice of a man who spoke the strange language.

The saint seemed to glide over the waves. As he got closer, the villagers glimpsed a plough’s wheel. Then they saw his bare feet, and were as astonished as if he had appeared out of the water. At that moment, the exclamation broke out: “Oh Lord! What is he doing there?” “What did he see?” The beast retreated and attempted to hide in its cavern where its tail was still hidden. Using its long fins, the dragon then headed to shore. Its central hole was covered with something, but it was not yet clear what it



was. Soon the sun set and the previous day's clouds gathered over the sea. The saint cut off the dragon's retreat and hit the beast with this crosier. He shouted to the beast, which only moved slowly to the side. The saint saw what had happened to the dragon, the tail had been twisted round and the beast was bent to the ground.

The saint left, mounted on his wheel, as swiftly as he had appeared, refusing to linger any longer in the county. The townsfolk knew nothing of his departure until nightfall, when a few settlers huddled together in a hut at the foot of the cliffs. They clung to the cavern's entrance, as if in an almost positive conviction that it was the light from the oaks that would bring their gods home.

Sometimes, little children cry without reason, looking in a precise direction, without reason, in blank spots, or, more often than not, at the same place at the same time. To stop the children's hideous apparitions, they are brought to a church. Salt to the kidneys. Women and men are



gathered round. We hear a terrible shrieking. Raging, raging, tossing, tormented. Tearing away in a limitless sea. Herb conscientiously helps to cool the blazing world. Men drive themselves insane with the haunting cries. People from the house are huddled there. And it's only the children.

Years earlier, the saint had come to ask the Diélette inhabitants for a piece of land to build his church and its dependencies. They would be willing to surrender it to him if he would raise the annual payments of rent to a far greater amount than it was worth at the time, something like five times its present value. The gift of land was much more considerable than expected, though the inhabitants did not contest it and a church was built at the edge of the cliff. The place we visited is called Lake Mead National Recreation Area. It was a good thing that the coyote was here. The park is 50 miles from Las Vegas. It's one of the best natural features in this state, and an example of how a powerful ecosystem and a good tourist town can coexist, which is why the idea of turning the desert into a park seemed



right. The church built by the saint has long disappeared. The church and adjacent churchyard were entirely demolished in 2015, and the land will now be released to the public. The Gaping Dragon can be found in the coastal area of Port Jordan. It has been covered by sea water and drifted inland by 20 metres and there is a lot of eroded stonework. It was estimated to be 400 years old. Often, the inhabitants point to where the nuclear plant used to be, but both sides claim that the symbol was chosen from modern Japanese, who mean *jinkūn*, which roughly means “mysterious disaster”. Several state owned companies have currently been in charge of taking over the nuclear plant.

Often, the inhabitants point to where the cavern used to be. Sometimes, the noises the wind makes are particularly powerful, and it is only when an attack is launched that the world seems to come to a standstill, and the inhabitants do not seem to notice the change.

Received ——— 2020 06 01

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Santrauka

Virusinės fikcijos: naršymas po laiką ieškant atminties žymeklių La Hagos radioaktyviam peizažui

Agnès Villette

Reikšminiai žodžiai: branduolinė istorija, branduolinė estetika, branduolinis žymeklis, branduolinė fikcija, La Haga, dirbtinio intelekto literatūra.

Branduolinės energetikos įvykiai įkėlė XX amžių į naują cheminį laiką, kuris iš esmės nepasiduoda nuodugniam tyrimui dėl nematomo, tačiau visur esančio radioaktyvaus užterštumo. Susiejant dvi skirtingas branduolines teritorijas – La Hagą Prancūzijoje, kur nuo 1960-ųjų veikia branduolinė elektrinė, skleidžianti radioaktyvų užterštumą, ir Amerikos Pietvakarių dykumas, kuriose po gausių Šaltojo karo metu vykdytų branduolinių bandymų tebesitęsia nuolatinės radioaktyvios iškritos, straipsnyje yra ieškoma stereotipų, metaforų ir naratyvų, kurių skerspjūvis atskleidžia neregimą radioaktyvumą, įaugusį į gamtovaizdį ir istoriją. Kvestionuojamas branduolinio atminties žymeklio, galinčio giliai įsiskverbti į radioaktyvumo laiką, sukūrimas. *Virusinės fikcijos* – tai meninis projektas, kuriame dirbtinio intelekto kompiuterinės programos generuoja virtualius vaizdus ir tekstus, suaktyvinančius alternatyvią galimybę suvokti branduolinius žymeklius. Nematerialios žinios, kurias įkūnija geografija, ir geologinė palaidotų branduolinių atliekų aplinka padeda kurti įsivaizduojamas fikcijas, kurios pademonstruoja, kaip informacija gali būti įamžinama ir skleidžiama laike ir erdvėje. Palaidotos, nuslopintos informacijos formos ir La Hagos regiono jūriniai grotai atkreipia mūsų dėmesį į vertikalią ašį, kuri yra būdinga gilioms geologinėms branduolinėms saugykloms. Tokiais tyrinėjimais remiamasi ir šiame straipsnyje, siekiant nustatyti paraleles tarp Normandijos pusiasalio senovinės žodinės liaudies legendos ir jos spekuliatyvos dirbtinio intelekto sugeneruotos šiuolaikinės versijos. Tekste ir vaizduose

drakonai susitinka su branduoliniais reaktoriais, šitaip pagimdydami baugias pranašystes, kurios prašosi transgresyvių interpretacijų. *Virusinės fikcijos* tyrinėja, kaip galima kurti naujas mitų formas, kurios gyvuotų 300 metų – tol, kol išliks La Hagoje palaidotos pavojingos radioaktyvios branduolinės atliekos.