ΑΛΛΟΤΡΟΠΙΑΣ

Ec(h)o-Processing: Seismic Audio Modulation System

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"The third terror was a rain of stones"

Recupito, *Report on the Eruption of Vesuvius*, 1635.

Akiko Okamura, Photograph in the exhibition *The Memories of Others*, capturing a moment of civil unrest in Creggan, Derry, c. 1969: security forces facing local residents, debris scattered across the street, traces of recent disturbances and stone-throwing. Exhibited at the Ulster Museum, Belfast, 13 June 2025 - 1 March 2026.[1]

Threshold

A rain of stones marks a moment when *something* crosses a threshold. Physical elements transition from one state or location to another, marking the point at which stability is interrupted. It may fall from the sky, expelled by the earth, or be torn from the ground by human hands. In either case, stone becomes an event: a sudden condensation of tension, pressure and rupture.

Within ΑΛΛΟΤΡΟΠΙΑΣ, this materiality is made tangible by the (volcanic) stones collected at Mount Vesuvius and Mount Somma, on which a long tongue of metal rests like a drop, a tear or a lava stream, tracing its edge and extending across the surrounding surface. This *stone-smacks instant* condenses geological movement, human presence, imagination and historical memory into a single sculptural piece, though it is presented as a *find*, an object recovered and displayed, whose meaning and origin remain open and unsettled.

ΑΛΛΟΤΡΟΠΙΑΣ starts from this shared suggestion, a rain of stones, and brings into relation two sites shaped by different yet resonant forms of instability: the geological fault system of the Vesuvian area in southern Italy and the geopolitical borderscape of Alexandra Park in Belfast, Northern Ireland. Across these landscapes, (s)objects, sounds, weather, data and memory circulate as *contingent agents*[2] refusing fixed identity while reclaiming historical weight.

The installation integrates sounds, videos, lights, prints and sculptural elements into an immersive environment. In the room at the back, a responsive system allows visitors to subtly influence the sound. Each interaction has an impact, positioning the audience within a feedback loop between human presence, environmental forces, and transformation.

I. Sonification: The Wall Beneath the Volcano

Over the course of a year, research developed through prolonged presence, attentive listening, and situated fieldwork across both locations.

[1] The photograph is included in the appendix: Fig. 1.
[2] See also: Arteaga, A. and Gansterer, N. (2025a) *Contingent agencies: Inquiring into the emergence of atmospheres*. Berlin, Germany: Hatje Cantz.

In Alexandra Park, Belfast, listening was conducted along and around the Wall. This border is not limited to the visible fragment of the Peace Line crossing the park but extends to a network of dematerialised signals: acoustic thresholds, behavioural codes, infrastructural markers, and invisible signals structuring movement and perception. Through sound recordings, activations, and encounters, a sound archive was constructed to document the park's acoustic ec(h)ology.

From this archive, three sound essays emerged:

1. Listening through touch, using contact microphones to register vibrations transmitted through materials and surfaces, foregrounding the tactile dimension of sound.

2. Non-human soundscapes - birds, vegetation, water, weather - highlighting how nature inhabits and reclaims the border.

3. Human and mechanical activities - from traffic and construction work to everyday urban sounds.

In parallel, research in the Vesuvian area involved repeated visits to the Vesuvian Observatory, both within its scientific facilities and its museum on the slopes of Mount Vesuvius. Fieldwork included Mount Vesuvius, Mount Somma, and *Rione Terra* in Pozzuoli, in the Phlegraean Fields. Encounters with former residents displaced during the bradyseismic crisis of the 1970s grounded the research in lived experiences of displacement and memory.

These two strands of research converge through a data-to-sound translation system. Seismic and bradyseismic measurements from the National Institute of Geophysics and Volcanology - Vesuvian Observatory branch - are converted into operational parameters: magnitude, depth, event frequency, and ground uplift variations become changes in pitch, granularity, rhythm, saturation, and intensity. These values modulate, in real time, recordings made in Belfast, around Alexandra Park, altering their structure and sonic texture. The digital transformation thus resonates with two types of boundaries: geological and geopolitical. The slow movement of the ground acts as an invisible matrix that reconfigures the soundscape of a space marked by division. Seismic signals are initially recorded in MSEED (MiniSEED) format, a standard in seismology. Each file contains detailed time series of ground motion along three axes (X, Y, Z), including precise timestamps and amplitude measurements. These files can be downloaded directly from the observatory (https://eida.ingv.it/it/getdata) offering access to high-resolution raw earthquake data. For use in this project, the MSEED files are converted into JSON (JavaScript Object Notation), a structured, machine-readable format. During this conversion, the amplitude values over time for each axis are preserved, along with the sampling rate, event duration, and metadata such as station name and location. This structured representation allows the seismic signals to be directly mapped to sound parameters in software. Each axis of ground motion is then assigned to a separate sonic parameter, and the JSON data are used to modulate sound features. Amplitude information controls volume or intensity, frequency components inform pitch, and temporal patterns shape rhythm or texture. The result is a set of three-dimensional soundscapes that reproduce the structure and dynamics of the original seismic event, creating an immersive experience where audiences can perceive earthquake events not just as abstract numbers but as structured sonic patterns. The project links geophysical processes with human perception aiming to make ground motion, timing, and intensity tangible through sound.

The interface of this data-to-sound translation system provides insights into patterns of residential and territorial movements in Belfast and in the Vesuvian Area. One of these graphs is directly inspired by John Darby's *Intimidation in Housing* (1974)[3], which examines movements in Belfast during a 13-week period from May 1 to August 1, 1972. Darby's study situates these displacements

[3] Melaugh, D.M. *Issues: Housing: Intimidation in housing by John Darby (1974)*, *CAIN*. Available at: https://cain.ulster.ac.uk/issues/housing/docs/nicrc.htm (Accessed: 25 February 2026).

within the broader context of sectarian intimidation, contrasting them with previous periods of mass movement following events such as the 1969 riots or the internment of 1971. Unlike those episodic displacements, the 1972 period demonstrates a gradual intensification of intimidation, offering a detailed view of population movements under different circumstances. Darby combines official sources, including *the Belfast Housing Executive Emergency Housing List* and the *Public Protection Agency*, with semi-official and community records such as parish documents and school enrolments. Through careful validation, he records the religion, family size, reasons for movement, and origin and destination address of each family, enabling an accurate mapping of residential mobility across the city. The analysis identifies four categories of housing movement: squatters, private house owners, evacuees who did not contact any relief agency, and families documented through official or semi-official sources. A total of 474 families were analysed in detail, with at least 1,018 extraordinary housing movements when including known squatters. Movements were heavily concentrated in North, North-West, and West Belfast, demonstrating an increase in segregation between Catholic and Protestant communities. Catholic families generally relocated to already Catholic-majority areas, while Protestants moved toward new housing estates or dispersed in East Belfast. Darby also highlights the influence of organized pressure by paramilitary groups, which exacerbated residential instability, and notes that larger families faced additional challenges in relocating, often remaining longer in high-risk areas. This detailed historical dataset provides a framework for understanding how the conflict shaped urban patterns and community segregation, and it directly informs the design of one of the interactive graphs in our interface.

In addition to the Belfast-inspired visualization, the interface includes a second graph illustrating residential displacement in the Phlegrean Fields between 1969 and 1972. The visualization draws on the analysis presented by Stefania Menoni et al. (2024), published in *Sustainability*[4]. The study reconstructs the bradyseismic crisis affecting Pozzuoli during this period through the integration of geospatial data, historical records, and demographic information, framing displacement as both an emergency response and a catalyst for long-term urban restructuring.

During the peak of ground uplift in March 1970, approximately 3,000 residents were evacuated within two days from the historic centre of Pozzuoli, particularly the *Rione Terra* district, due to structural instability caused by bradyseism. This rapid evacuation marked a critical moment in the crisis, initiating a process of relocation that extended beyond immediate emergency measures. Displaced residents were progressively rehoused in newly developed residential areas outside the historic core, including zones such as Toiano, contributing to a redistribution of population away from the most vulnerable central areas. The graph translates these events into a longitudinal format, showing a sharp increase in displacement around 1970 followed by continued residential reallocation in subsequent years. Rather than representing a temporary fluctuation, the data reflect a structural transformation in settlement patterns triggered by volcanic unrest. By visualizing year-by-year changes between 1969 and 1972, the interface makes explicit the relationship between geophysical instability, institutional decision-making, and demographic redistribution, supporting the article's broader argument that risk governance in volcanic territories produces enduring spatial and social reconfiguration.

A third graph presents data on ground uplift in the Phlegrean Fields over the last fifty years, based on historical levelling data and continuous GNSS monitoring conducted by the INGV. The dataset captures major bradyseismic episodes that have reshaped the caldera floor. Significant uplift phases include approximately 0.74 m between 1950–1952, 1.59 m during the 1969–1972 crisis, and 1.78 m between 1982–1984. After a prolonged subsidence phase in the 1990s, renewed inflation began in 2005. Since then, GNSS measurements at the Ri*one Terra* station in Pozzuoli indicate more than

[4] Menoni, S., Galderisi, A., Carrion, D., & Gerosa, C. (2024). Cross-Sectoral and Multilevel Dimensions of Risk and Resilience Management in Urban Areas Enabled by Geospatial Data Processing. Sustainability, 16(19), 8712.

1.3 m of additional uplift through 2024. By visualizing long-term deformation trends, the graph situates contemporary unrest within a broader cycle of uplift and subsidence. It therefore complements the displacement and relocation data presented in the interface, linking human mobility patterns to the geophysical dynamics of caldera inflation.

Finally, a fourth, more conceptual graph evokes the idea of movement, displacement, and loss of home without aiming for scientific precision. It presents a cloud of points that gradually fade and disappear, symbolizing the ephemeral and often intangible nature of forced relocation. This visualization emphasizes perception and experience over exact measurement, providing a poetic counterpoint to the more data-driven charts and inviting reflection on the human dimension of displacement.

These visualizations are designed to be overlaid with fragments of video footage captured in diverse locations, creating a layered, multisensory experience. Among the video elements are a detailed view of the inner wall of Mount Somma's caldera, formed approximately 25,000 years ago, offering a geological counterpoint to human patterns of movement; a close-up of a section of the Peace Wall in Alexandra Park, evoking the material traces of social and sectarian divisions; and the flickering, unpredictable movement of fire, emphasizing both elemental force and the ephemeral nature of presence and absence. By combining these moving images with the interactive graphs, the interface generates a dynamic interplay between data, materiality, and perception, allowing users to experience displacement, geological change, and social histories simultaneously. As these videos overlay the interactive graphs, the interface produces a dynamic, almost tactile interplay between the visible and the invisible, the measured and the ephemeral, inviting users to sense displacement, territorial transformation, and collective memory as a simultaneity of perception rather than as self-contained datasets.

II. Artefacts from the Magazines of Fire

The exhibition space introduces a second movement through objects. A shift based on resemblance, analogy, and partial recognition. Artefacts are presented almost as in a museum display: objects that appear to derive from a distant time and place, whose identity remains unresolved. Some originate from performances and spontaneous actions carried out during the research period; others are poetic reconstructions, standing in for elements that could not be collected or transported. Rather than functioning as documents, these objects resist classification, inviting speculation rather than explanation. As introduced previously, the stone here is central. Other artefacts echo industrial histories and alchemical theories. Metal objects recall Belfast's industrial past where metal once shaped both landscape and belonging, at the same time they evoke ancient observations of molten matter and the fermenting Earth.

In the past, volcanic eruptions were understood as chemical processes, and metal as an agent of transformation rather than mere utility. The metal artefacts presented in the exhibition draw on a long genealogy in which metallurgy, alchemy, and early volcanology were deeply entangled. In the seventeenth century, theories of volcanic activity emerged largely from observations made within extractive and metallurgical industries. Alchemists noted, for instance, that metals lose weight when melted, leading to the hypothesis that a volatile substance escaped during heating. This elusive matter was named *phlogiston*: a fire-material believed to carry the energetic principle of combustion. Within early alchemical cosmologies, such as those proposed by Johann Joachim Becher in *Physica Subterranea* (1669)[5], all substances were composed of water and earth, the latter differentiated into vitrifiable (petrous), inflammable (fatty), and mercurial (fluid) forms. These ideas

[5] See Also Ricciardi, G.P. (2009) *Diario del Monte Vesuvio: Venti Secoli di Immagini e Cronache di un vulcano nella città. tomo 1 I-XVII secolo*. Napoli: Edizioni scientifiche e artistiche.

became foundational for early chemical and volcanic theories, according to which volcanic eruptions were driven by the release of phlogiston into the atmosphere, understood as chemically inert yet saturated with this volatile fire-substance. Athanasius Kircher's *Mundus Subterraneus* (1675)[6] expanded this framework into a global vision of volcanism. Visiting Etna and Vesuvius multiple times, Kircher described the Earth as a hollow body animated by subterranean winds, waters, and vast cavities he termed *pyrophylacia - magazines of fire*. For Kircher, volcanic eruptions resulted from underground combustions of sulphur, bitumen, coal, and hygroscopic salts, ignited and sustained by infiltrating water and air. Lava, in this view, was not merely destructive but generative: capable of enlarging a volcano or even creating a new one, as in the formation of Mount Nuovo in the Phlegraean Fields in 1538. These early theories framed the Earth as an alive, active, fermenting body, shaped by internal pressures, volatile substances, and slow transformations rather than divine intervention, proposing that natural processes governed the formation and reconfiguration of the planet. With advances in metallurgy, new explanations emerged: Martin Lister and Nicolas Lémery likened volcanic eruptions to chemical fermentations, demonstrating in lab that mixtures of iron filings, sulphur, and water could spontaneously ignite, inflate, and expand - a behaviour extremely close to the one of eruptive landscapes.[7]

Within ΑΛΛΟΤΡΟΠΙΑΣ, these alchemical and proto-scientific imaginaries are invoked as an entry point for exploring alternative epistemologies, including contemporary theories of relationality - approaches that understand phenomena as unstable, relational, and animated by invisible yet crucial forces. The metal artefacts presented in the exhibition echo this lineage: shaped by fire, extraction, and transformation, they recall both the Vesuvian substrata and Belfast's industrial histories - with its *magazines of fire* - where furnaces, forges, and foundries produced industrial machinery and components on a massive scale.

William J. Smyth's work on the territorial formation of Ulster[8] provides an important framework for understanding the emergence of Belfast as an industrial city. Although he does not focus specifically on metal as a symbolic category, his analyses offer conceptual tools for reading industrialisation as a material and spatial process that reshaped landscape, infrastructure, and collective identity. Following Smyth's ideas, industrialisation in Ulster can be understood not simply as an economic development but a profound territorial reorganisation. The growth of ports, shipyards, railway lines, workers' housing, and commercial networks transformed the morphology of Belfast and embedded heavy industry within the city's physical and social fabric. Belfast's transformation was driven by imperial trade networks, patterns of land ownership, technological innovation, and the consolidation of labour cultures aligned with Britain's industrial expansion. The shipbuilding industry - particularly the activities of Harland & Wolff - stands at the centre of this transformation. Steel infrastructures, dry docks, cranes, and ship hulls were not merely technical installations but territorial markers. They stabilised a specific spatial order and materialised a civic identity rooted in engineering expertise, productivity, and the industrial myth of modernity. In this sense, the industrial landscape became both functional and symbolic: a visible sedimentation of economic processes, social hierarchies, and political affiliations. One of Smyth's most significant contributions is his understanding of landscape as historically constructed and, we would say, geopolitically stratified. Landscape as an archive of power relations and productive regimes. The industrial city thus emerges as a palimpsest in which material infrastructures - iron frameworks, steel yards, harbour basins - record cycles of extraction, fabrication, and global exchange. Metal, in this context, operates not only as resource but as a structuring agent: shaping urban form, organising labour, and contributing to collective self-understanding. Industrial Belfast also carried a strong

[6] Ibid.
[7] Ibid.
[8] Smyth, W.J., 2006. *Map-making, Landscapes and Memory: A Geography of Colonial and Early Modern Ireland,* c.1530-1750. Cork: Cork University Press.

ideological dimension. Heavy industry became intertwined with civic pride and political identity, particularly within unionist communities that saw shipbuilding and engineering as evidence of modernity and alignment with British industrial power. The materiality of steel and machinery therefore exceeded its economic function; it helped forge narratives of belonging, distinction, and territorial difference within Ireland. Read through Smyth's framework, the industrial past of Belfast can be interpreted as a process in which matter itself - iron, coal, steel - acted territorially. These materials reconfigured shorelines, redefined horizons, and structured social divisions across the city. In this sense, industrial materiality participated in the making of internal boundaries as much as in economic growth. The industrial landscape of Belfast demonstrates that territory is produced through labour, infrastructure, and embodied practices, rather than merely mapped or legislated. Metal, far from being an inert substance, becomes part of a territorial process - one that continues to inform urban memory and perception long after the decline of heavy industry.

As seen, in both contexts, metal carries traces of tension and control, but also of potential reconfiguration. Like phlogiston itself, the metal artefacts within the exhibition suggest the presence of something that escapes capture: a remainder that resists full identification.

In the exhibition, there are different metal artifacts. One, a negative cast of an ear, emphasizes the relationship between presence and absence in listening. The form highlights how sound can be captured yet simultaneously lost, drawing attention to perception, memory, and the material conditions of hearing. It prompts reflection on how acoustic traces - of environments, histories, or human activity - can be recorded, mediated, and forgotten. Other artifacts appear as clusters of lapilli, fluid and irregular, suggesting explosions in both Vesuvian and Belfast contexts. Still others take the form of tongues of solidified lava, elongated and viscous, reminiscent of molten flows or drops of coagulated blood. Together, these forms trace gestures of eruption, accumulation, and containment, capturing the tension between movement and stasis, violence and preservation, and highlighting metal's capacity to carry both form and memory. In keeping with the practices of museum display, each object has been assigned a name, either invented or borrowed from the scientific nomenclature of species native to the Vesuvian area or to Alexandra Park. This decision allows the objects to acquire an additional layer of identity, situating them within a network of ecological and geographical references, and encouraging viewers to consider them not only as abstract forms but also as part of a broader material and environmental context. By naming them, the works articulate a link between natural history, local specificity, and the exhibition's conceptual framework, without imposing a singular interpretation or narrative.[9] Proceeding from this, rubber, wax, charcoal and polyurethane objects in the exhibition resemble the forms, between others, of a sculpted egg, a little heart and a blue sea anemone. The egg in particular is solid but split along a central seam, its interior hollow. The egg originates from a previous performance referencing Joseph Beuys' installation *Terremoto in Palazzo*. In ΑΛΛΟΤΡΟΠΙΑΣ, the egg returns as trace among the artefacts: presented solid and also as a discarded shell, unrolled and abandoned like the skin of a reptile, its emptiness whispers with the promise of metamorphosis. Finally, a reptile's actual skin, reminiscent of the casts of the bodies from the eruption of Vesuvius in 79 AD, as if filling the empty molds left behind.

III. Silenced Languages Resistant to Definition

In dialogue with these finds, a series of prints paired with selected artefacts forms a further network of analogies. Two maps articulate different modes of historical and material stratification. One traces the lava flows of Mount Vesuvius, reconstructing their paths across the terrain. The other, located in Alexandra Park and titled Historical Events, has become progressively illegible over time

[9] See appendix Fig. 2

and through the interventions of the park's own visitors. The plexiglass that protects it is scratched and marked, as if enacting an attempt to erase a past with which the viewer no longer identifies.

The two wall-mounted artefacts extend this reflection on layering and transformation. One is an early wax object produced during experiments to create the "reverse ear." We chose not to cast it in metal, leaving it in wax because of its affinity with the lava map of Mount Vesuvius. The other consists of bronze droplets placed in relation to the sunlight filtering through the trees of Alexandra Park. This interplay of metal and light overlays the map with yet another stratum, introducing an additional temporal dimension of interpretation.

Among these elements lies a folded sheet of paper incised with fine cuts, introducing the notion of a proto-language. It evokes Ogham, the ancient Irish alphabet derived from the forms and names of trees, in opposition to the programming code that structures the soundscape and as a mode of inscription rooted in landscape and gesture. Resistant and indigenous, Ogham endured processes of Christianization and conquest, operating as a script for what could not otherwise be spoken. Ogham flourished primarily in early medieval Ireland and, to a lesser extent, in the western Celtic regions of Britain between the fourth and seventh centuries CE. Reading an Ogham inscription required knowledge of both the phonetics and the vocabulary of the time. While there is no evidence that Ogham was spoken as a code, it functioned as a materialized oral memory, encoding genealogies, territorial claims, and social identity into stone in a way that preserved the sounds and names of the past for posterity.[10]

Each sign embodies presence, memory, and identity through incision, each is both a gesture and a relic, a trace of human action inscribed into material form. Its distinguishing feature is a linear script made up of notches and incisions carved along the edges of stones or wooden objects, forming a material and spatially grounded form of writing. Unlike alphabetic scripts meant purely for inscription on flat surfaces, Ogham inherently engages with gesture, landscape, and presence, linking human action with the environment. The very form of Ogham requires a bodily engagement that transforms the act of recording names, territories, or messages into a physical act. Ogham inscriptions often marked territorial boundaries and asserted social presence in the landscape. In this sense, they were instruments of territorial production, encoding human presence, lineage, and ownership. One of the most well-known aspects of Ogham is its association with trees and plants, which has given rise to the idea of the "tree alphabet." Medieval glossators linked each letter to a specific tree. They also attached symbolic meanings, relating each plant to moral, cosmological, or mnemonic associations. It is important to note, however, that this tree correspondence is not universal in the earliest inscriptions. Some letters' names corresponded to trees, while others were reinterpreted by medieval scholars to fit the arboreal schema. Nevertheless, the connection between letters and trees resonates with Celtic cultural values, emphasizing the deep interrelation between nature, memory, and inscription. Contemporary scholarship (e.g., McManus 1991; Swift 1997)[11] highlights that Ogham is far more than an early alphabet. It mediates between oral tradition and material inscription, serves as a means of producing territoriality and social memory, and bridges language, gesture, and landscape. As such, Ogham can be understood as an early form of "spatial literacy," where writing is inseparable from the environment and the human body interacting with it.

These relation between language and landscape is explored in Armand Gatti's film and zine *And Our Names Were Names of Trees* (Derry, 1981), produced in collaboration with participants of a cross-community workshop during the 1981 Hunger Strikes. In the work, participants reclaim

[10] *Some account of ancient Irish treatises on Ogham writing, illustrated by Tracings from the original MSS on JSTOR*. Available at: https://www.jstor.org/stable/25506655 (Accessed: 25 February 2026).

[11] McManus (1991) *A guide to ogam : McManus, Damian : Free download, Borrow, and streaming*, *Internet Archive*. Available at: https://archive.org/details/guidetoogam0000mcma/page/n7/mode/2up (Accessed: 25 February 2026); Swift, C. (1997) *Ogam stones and the earliest Irish Christians*. Maynooth: Dept. of Old and Middle Irish, St. Patrick's College.

identity and collective memory through the symbolic use of arboreal names. The city of Derry itself - *Doire*, meaning *oak grove* - demonstrates the same principle: identity is embedded in the landscape, inscribed through gesture, and resistant to erasure. Naming becomes an *act* of survival, self-determination, and political presence. Just as Ogham signs encode connection to the land, Gatti's work transforms personal and communal memory into inscriptions that resist domination and censorship. As in Ogham, names become traces of survival, carved into material, social, and mnemonic terrain.

During the same year and in a similar vein, Bobby Sands' Gaelic poem from his prison diary reflects a related logic, emerging from confinement and oppression:

I heard a bird and yet did not see the dawn of day…
Would that I were deep in the earth.

Read literally, the lines could speak to suffering and the wish for release through death; read metaphorically, they evoke a subterranean rooting, a deep anchoring in the earth that preserves life, thought, and resistance even when buried. In this sense, Sands' words resonate with the arboreal logic of Ogham and Gatti's work: identity and agency are inscribed into a material and symbolic landscape, enduring despite erasure, displacement, or domination.[12]

Moreover, just as trees encode presence and memory through Ogham inscriptions grounded in gesture and landscape, so often non-human agents record territorial change into human-made structures. For instance, along the coast of the Phlegraean Fields, the traces of lithodomous molluscs carved into ancient stone mark past sea levels and subtle ground movements. These date shells, alive in the intertidal zone and preserved through time on the columns of Pozzuoli's ruins, function as natural recorders of bradisismic uplift and subsidence, inscriptions of geological motion in biological matter[13]. These marks may teach us that territorial boundaries are temporal, embodied, and entangled with living processes, and may suggest us that limits are not imposed, but arise contingently, dissolve, and reconfigure through natural and social dynamics. In a similar logic of layering, just as the lithodomi inscribe geological history into stone, human acts of witnessing accumulate in strata of memory and experience, highlighting how temporal and relational processes leave persistent traces.

Testimony given for others is a layer, two layers in the geological strata (Peress, 2020)).

Within this exhibition a similar process is enacted: preserving what is vulnerable and allowing presence to persist in forms both legible and cryptic, revealing that what is not immediately clear may be no less real or consequential.

At the level of territory and governance, the North of Ireland exemplifies a similar subterranean tension. Modernity demands clarity, definition, and the elimination of ambivalence, yet the country repeatedly refuses such containment. As noted in *Annals of the North*: "Modernity hates the North of Ireland". The region resists neat categorisation: it is neither fully British nor fully Irish, every definition contested, every act of naming charged with anxiety. As Sygmunt Bauman (2020) observes, the modern project seeks to exterminate ambivalence: to define precisely and suppress what cannot be defined, filling the blank spots of the mappa mundi. The North, by contrast, is an under-defined space, a *demon of ambiguity*, whose existence challenges every attempt at imposed order. [14]

[12] See also Peress, G. and Klatell, C. (2020) *Annals of the north*. Göttingen, Germany: Steidl.
[13] See appendix Fig. 3
[14] See also Peress, G. and Klatell, C. (2020) *Annals of the north*. Göttingen, Germany: Steidl

Occupation, rebellion, suppression - cycles of governance and resistance, echoed in the history of Belfast, might resemble the hidden pressures of fault lines and seismic activity, which continue to shape the land regardless of surface control.

In this light, the field within ΑΛΛΟΤΡΟΠΙΑΣ becomes an instrument for attuning to the subterranean and to borders that are never fixed. Listening becomes a method to register relational uncertainty. The exhibition advocates for opacity and incompleteness as ethical and political practices, in direct response to the obsession with control, categorisation and identification. Borders here are not lines to be traced, but dynamic processes - vibrational, participatory, and continually renegotiated.

IV. Control Room as Generative Space

Historically, borders have long been related with fear and the management of danger. Monotheistic creation myths often begin with formless chaos and acts of separation - such as dividing sky from earth or land from sea - imposing order while mitigating perceived threats. States secured boundaries both physically and symbolically, creating psychological barriers between internal cohesion and external threat. Ancient cosmologies reveal ambivalence toward borders: while civilizations defined limits to organize the world, questions about the void beyond remained open and often terrifying. Priests and philosophers left room for imagination, myth, and projection of fear, a logic that persisted even as Greek astronomy and mathematics demonstrated a spherical earth. This association between borders and terror continues today. Modern states maintain physical and conceptual borders justified by economic, social, or security concerns. While the sources of fear have shifted, the mechanisms are similar: borders define safe inside and dangerous outside, reinforcing asymmetries of power[15]. Such dualisms - inside/outside, safe/dangerous - are not natural or inevitable; they are socially and politically constructed, and can therefore be analysed, questioned, and deconstructed allowing us to rethink the categories they generate.

Yet, some ancient polytheistic cosmogonies might also suggest alternative ways of thinking about the nature of borders and their relationship with agency and sound. A deeper reading suggests that many of these ancient stories begin not with law or language, but with actions such as the dismemberment of divine bodies (Mesopotamian, Babylonian, Egyptian myths). They depict territory emerging from embodied, relational, often violent, and presumably noisy acts. The genealogy of borders can be understood here as fluid, contested, and permeable, shaped by interactions and disruptions, echoing contemporary experiences of borderscapes. At the heart of this approach lies a distinction between voice and sound. Voice, especially linguistic, is historically tied to power, division, and legibility; sound - including natural, mechanical, and urban noise - operates outside formal language, offering an alternative, embodied means of perceiving territory[16]. Returning to contemporary spatial politics, modern borders - especially in post-conflict, post-colonial, or de-colonial contexts - are increasingly diffuse, internalized, and mobile. Auditory experiences provide a porous way to perceive territorial boundaries, highlighting how we traverse them. In this framework, sound becomes infrastructural, while borders are not represented but experienced.

Moving forward within ΑΛΛΟΤΡΟΠΙΑΣ, a separate cabinet evokes a control room - a monitoring space where the bordescape is formed by a monitor to interact with and a window to look through - inviting visitors to engage directly with seismic data. Headphones deliver a continuous soundscape modulated by both historical and real-time values. Here, perception becomes intervention.

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[15] Cimadomo, G., Esmailpour Ghoochani, I. and Martínez Ponce, P. (2024) 'Ancient civilizations' territorial borders analysed through their cosmogonies', *Estudios Fronterizos*, 25. doi:10.21670/ref.2416152.

[16] Cox, C. (2009) 'Sound art and the sonic unconscious', *Organised Sound*, 14(1), pp. 19–26.

I doubted perception. I doubt everything, so why not perception above all, the murky moment of overlap between the inner and outer world[17].

While Peress, as a photographer, primarily reflects on visual perception, his insight can help us to reconceive the control room as a relational, multisensory space. In History of Bourgeois Perception, Donald M. Lowe[18] demonstrates that the primacy of vision in modern Western societies is historically constructed. Knowledge has long depended on visibility: to map, to classify, to render legible. The world becomes legible through lines, grids, maps, and charts; subjects themselves become objects of observation. As Michel Foucault observed in *Discipline and Punish*[19], modern power operates through regimes of visibility, producing spaces, norms, and subjects that can be monitored, assessed, and controlled. David Lyon[20] shows that contemporary surveillance extends this logic, making populations, mobility, and behaviour legible through technological infrastructures.

The ghosts of past civilizations - histories, cosmologies, and narratives - continue to shape how we perceive limits and dangers, as well as how space itself is organized. Yet the simultaneity and totality of perception cannot be reduced to frameworks of power, religion, or control. Peress' reflections, like the myths of creation or the walls of ancient empires, remind us that the terror of borders is not only an external condition but also an internalized experience.

The multiplicity of unresolved tensions within perception reflects both the persistent force of limits and the impossibility of containing life within rigid structures. In this sense, borders become spaces where witnessing is an ethical and existential practice of proximity. This practice is enacted in the control room, though its full effect emerges only after visitors have engaged with the preceding elements of the exhibition. Prints, artifacts, spatial interventions, and ambient conditions attune participants to vibration, resonance, and relational patterns of attention. By the time visitors enter the control room - one at a time - their sensory registers have already been expanded: they are prepared to perceive not only what is visible but also what can be felt, heard, and sensed in subtle material and acoustic registers.

Finally, inaccessible, visible through the glass from the control room, at the far end of the exhibition, a large-scale print of Mount Somma's inner caldera cover the gallery wall. Formed over 25,000 years ago, the caldera is presented as a textured, fractured surface whose evades recognition. The visitor is confronted with a pattern that cannot be fully read, encouraging perception to shift away from the eyes alone and toward the body, ears, hands, and intuition. It is through this cumulative experience that Massumi's notion of affect comes into play. *In Parables for the Virtual*[21], he emphasizes that affect operates as a pre-cognitive response to forces and environments that exceed cognition or immediate understanding. Affect is felt, lived, and relational, rather than symbolic or semantic. In this encounter, the Volcano and Alexandra Park become mirrors and echoes of one another - but also textures and tremors: landscapes of instability, memory, and latent energy, inviting visitors to inhabit a mode of attention in which perception is distributed, relational, and ethically charged.

Writing about an early project that Donatella Guarino, I and six other women artists developed in the Phlegren Fields, Lidia Curti argues in *Stones, Lava, Sand, Water*[22]: art, like nature, does not merely represent the world but can give rise to new worlds. Drawing on Félix Guattari and his

[17] Peress, G. and Klatell, C. (2020) *Annals of the north*. Göttingen, Germany: Steidl.
[18] Lowe, D.M. (1982) *History of bourgeois perception*. Chicago: University of Chicago Press.
[19] Foucault, M. and Sheridan, A. (2020) *Discipline and punish: The birth of the prison*. London: Penguin Books.
[20] Lyon, D. (2021) *The culture of surveillance: Watching as a way of life*. Cambridge, UK: Polity Press.
[21] Massumi, B. (2021) *Parables for the virtual: Movement, affect, sensation*. Durham: Duke University Press.

[22] Chambers, I., Grechi, G. and Nash, M. (2014) *The ruined archive*. Milano: Mela Books.

concept of the three ecologies, Curti insists on eco-art[23] (*oikos*) as a practice of cultivation, capable of recomposing the fracture between subjectivity and exteriority and of reactivating a continuum between the environmental, the social, and the psychic. Art, she writes, shares with nature processes of metamorphosis, stratification, and discontinuity; through interruptions, superimpositions, and migrations of meaning, it produces objects and languages that open onto processes of reinvention of subjectivities. In this sense, artistic creation is a generative act: it does not enclose reality within a fixed form but reopens it as a field of possibility.

It is precisely within this perspective that ΑΛΛΟΤΡΟΠΙΑΣ finds its theoretical grounding. If, in the work we presented in the Campi Flegrei, Curti identified a threshold between the human, the mineral, and the cosmic, today that threshold takes the form of a device that brings into relation Alexandra Park and the Vesuvian area as continuous landscapes. In the control room the work constructs a relational environment in which perception and intervention coincide. Interaction modifies the soundscape; the boundary between observer and system dissolves. Here, what Curti attributes to art is realized: the capacity to generate an alternative space, a possible world in which subjectivity emerges as a distributed process.

This is not simply a geographical metaphor but the construction of a rhizomatic field of alliances, where instability, memory, and latent energy produce new perceptual configurations. As Curti writes, art operates through discontinuities and returns, interruptions and stratifications: thus, the control room stages the modern logic of surveillance only to destabilize it from within, transforming vision into listening, monitoring into practicing, control into shared vulnerability, with observer and system mutually influencing one another. In this sense, ΑΛΛΟΤΡΟΠΙΑΣ does not represent either the volcanic or the contested urban landscape; it reactivates them as worlds in potential, cultivating a space in which *the border* becomes a practice of proximity and perception itself takes shape as a generative act.

[23] The concept of eco-art, as articulated by Félix Guattari and further developed by Lidia Curti, is grounded in the notion of *oikos* as a continuum linking environment, social relations, and psychic life. In this framework, "eco" does not simply refer to nature in a landscape sense, but to a complex habitat in which subjectivity and exteriority are co-constituted. Ecological art, therefore, does not represent the environment; it intervenes within its processes, cultivating relationships and reactivating connections among Guattari's three ecologies — environmental, social, and mental.
Building on this theoretical foundation, I propose an expansion of the term into ec(h)o-art, where the insertion of the "h" makes explicit the coexistence of *eco* (habitat, dwelling, milieu) and *echo* (resonance, sonic return). Ec(h)o-art thus moves beyond environmental practice alone to include an acoustic and vibrational dimension, understanding sound as a primary mode of relating to the world. If Western modernity has privileged regimes of visibility — distance, observation, control — the ec(h)o introduces instead a logic of resonance: proximity rather than separation, interference rather than domination.
In this sense, active listening becomes an ontological posture before it is an aesthetic strategy. To listen is to recognize oneself as part of a relational field in which every presence alters the environment and is altered by it. Echo is not mere repetition; it is transformation through return. It renders perceptible the entanglement of inner and outer, body and landscape, data and atmosphere. Within ec(h)o-art, being in the world means inhabiting a zone of resonance where subject and environment, natural and technological systems, continuously modulate one another.
The concept of ec(h)o is currently being developed in my doctoral research, beginning with the notion of ec(h)o-zones: physical, acoustic, and conceptual spaces in which vibration, memory, and environment intersect to generate unstable perceptual configurations. Ec(h)o-zones are not simply sites but fields of intensity where experience is distributed across human and non-human agents, geology and infrastructure, presence and latency. In this expansion, eco-art becomes ec(h)o-art — a practice that conceives art as the cultivation of resonant environments and understands listening as an ethical and political mode of inhabiting the world.

APPENDIX

Fig. 1



Fig. 2

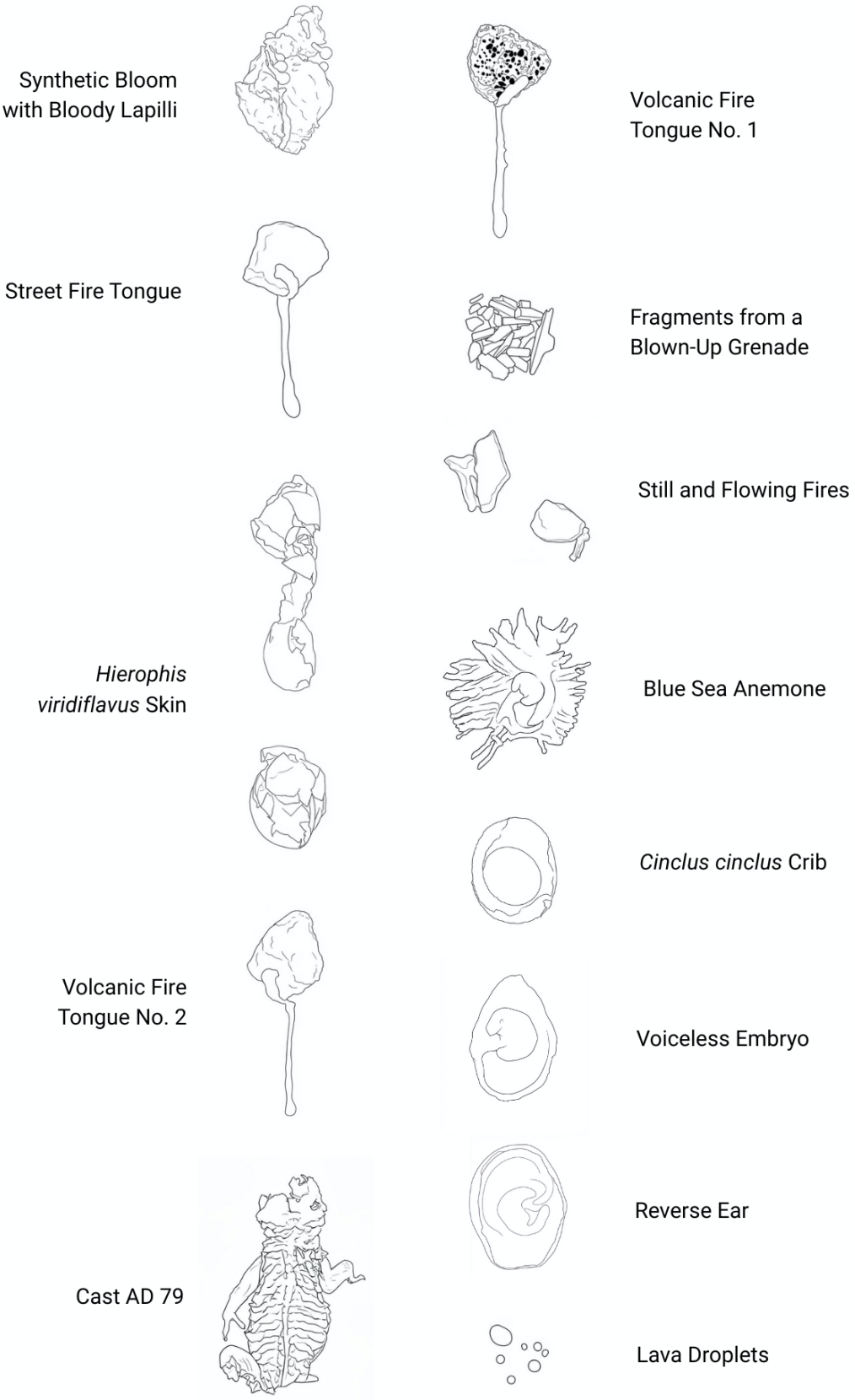

Synthetic Bloom with Bloody Lapilli
Volcanic Fire Tongue No. 1
Street Fire Tongue
Fragments from a Blown-Up Grenade
Still and Flowing Fires
Hierophis viridiflavus Skin
Blue Sea Anemone
Cinclus cinclus Crib
Volcanic Fire Tongue No. 2
Voiceless Embryo
Reverse Ear
Cast AD 79
Lava Droplets

Fig. 3

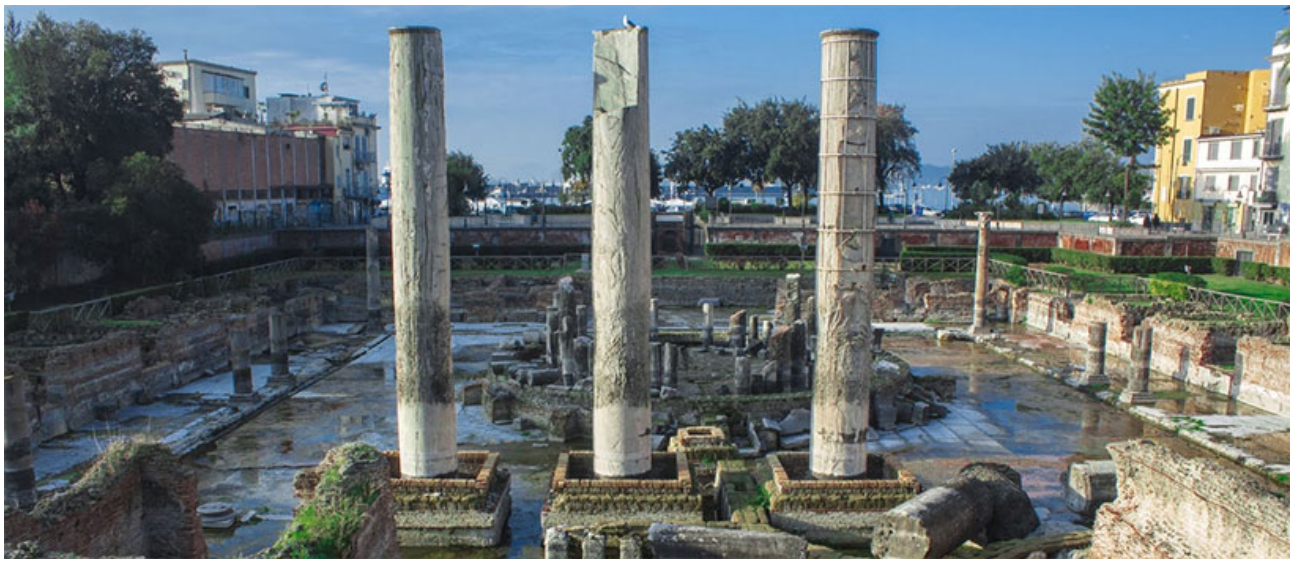
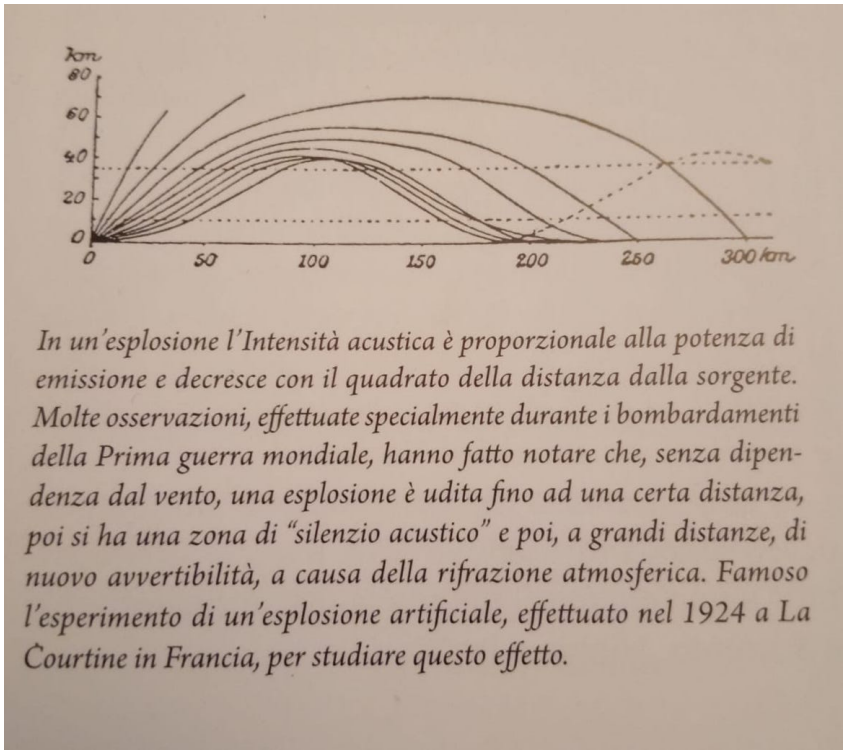


Fig. 4



In un'esplosione l'Intensità acustica è proporzionale alla potenza di emissione e decresce con il quadrato della distanza dalla sorgente. Molte osservazioni, effettuate specialmente durante i bombardamenti della Prima guerra mondiale, hanno fatto notare che, senza dipendenza dal vento, una esplosione è udita fino ad una certa distanza, poi si ha una zona di "silenzio acustico" e poi, a grandi distanze, di nuovo avvertibilità, a causa della rifrazione atmosferica. Famoso l'esperimento di un'esplosione artificiale, effettuato nel 1924 a La Courtine in Francia, per studiare questo effetto.

RESEARCH PROCESS DOCUMENTATION (May 2025 – February 2026)

Photographs by Michela Strippoli and the artists



