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Topologies of Air: Shona Illingworth's Art Practice and the Ethics of Air

Abstract
In her video and sound art practice, artist Shona Illingworth has extensively engaged with atmospheric environments as they are experienced physically and affectively. In the a multi-screen and sound installation, *Topologies of Air* (2021), Illingworth addresses the conditions and discourses that define today's perception and understandings of airspaces. This article closely examines *Topologies of Air* and further relates it to Illingworth's art research practice, outlining key features and methodologies to argue that Illingworth's decentralised approach to airspaces is rooted in an ethics of air that fosters empathic understanding. This is congruent with the aim of proposing a new human right on the freedom to live without threats from above put forward through the Airspace Tribunal, an integral component of Illingworth's project that she has developed in collaboration with human right expert, Nick Grief.

Key words: Illingworth, airspace, ethics, research art practice, de-centralising

'[…] the aeroplane shot, till it was nothing but a bright spark; an aspiration; a concentration; a symbol' (Woolf 1925/1996, 57): with these words Virginia Woolf described an airplane flying over London in 1925. Her words capture the awe and potential with which airspace was endowed at the beginning of the twentieth century. Woolf's description still resonates today. However, its associations are now tinged with nostalgia, as our relationship with the skies has substantially changed. Pollution has altered the atmosphere with dramatic ecological effects that endanger living environments and human health. Air bombing has imbued it with apprehension; nuclear explosions and radioactive spillage have produced long-lasting contamination. What in 1925 stood as a new frontier of expansion has turned for many into a site of concern and surveillance, if not oppressive fear. For us, in the 2020s, the skies have become precarious, an intricate web of unstable gaseous locations traversed by contrasting discourses, hegemonies and an ever-impending sense of foreboding. The mapping

of these diverse airspaces, their discursive articulations and the forms of dominance that regulate them is the subject of Shona Illingworth's immersive multi-screen video and sound installation, *Topologies of Air* (2021).

Illingworth is not new to an exploration of atmospheric environments. Indeed, the environment as an aggregate that 'encompasses both the physical and the atmospheric' (Bennett 2011, 159) underpins much of her research practice which focuses on a multidisciplinary analysis of how events and their affective resonances define the environments in which we live (Bennett 2012, 54-76). In *Topologies of Air*, Illingworth does not engage with the atmosphere of a specific place, but rather with the very notion of airspace and of its topological subdivisions by examining their conditions and the discourses predicated on them. In mathematics, the term topology refers to the study of the spatial properties and relations of geometrical figures as they undergo continuous deformation. By extension, it also refers to the study of a locality, and to how the constituent parts of a network are connected or arranged (Oxford English Dictionary). Because topology, as Steven Connor observes, is concerned with spatial relations (i.e., continuity, insideness, outsideness, disjunction and connection), 'with what remains invariant as a result of transformation, it may be thought as geometry plus time, geometry given body by motion' (Connor 2004, 106). The relational inseparability of space-time-motion resonates with a consideration of airspaces, of their connectedness and malleability, their physical and affective morphologies, their historical and contemporary significances — when, in other words, we question the *topoi* and *logoi* of air.

In what follows, I shall examine the formal and thematic development of *Topologies of Air* in relation to Illingworth's art practice. In particular, I shall outline an internal research trajectory whereby *Topologies of Air* emerges from Illingworth's critical engagement with airspace as a site of ethical concern and of physical and emotional immersion. Accordingly,

the aim put forward in the Airspace Tribunal, part of the research development of this work, to establish a new human right to protect the freedom to live without physical and psychological threat from the air and outer space (Grief et al 2018), is rooted in Illingworth's extensive investigation of airspaces and the threat posed by their colonization and militarization. In this sense *Topologies of Air* and the Airspace Tribunal continue Illingworth's art research practice and its critique of hegemonies, contributing to the field of digital war through the mobilization of ethics and empathic responses solicited by the immersive space of this work.

Topologies of Air: A Video and Sound Installation

Topologies of Air opens with images of soft cloud formations in a blue sky as they pass through the three screens of the installation. Dissonant abrasive notes mix with the sound of air currents, upsetting the expansive depth of these images. A digital animation of the earth's electro-magnetic fields emerges from behind one of the cloud formations in the central screen and floats in space (Fig. 1). At the same time, we hear the words of astrophysicist Ilias Fernini,

The sun

sends this solar wind

a huge amount of these highly charged particles

and they may disturb

this upper atmosphere

so if you send a signal through this upper atmosphere

the signals cannot pass through

or it can be absorbed

or it can be refracted

that's why our atmosphere

is not stable (Illingworth 2021, voiceover).

Fermini refers to the interference caused by solar radiation to the transmission of GPS and other signals across the atmosphere, introducing two central themes of the work: the militarization and colonization of airspaces and the increasing surveillance enacted through digital data collection. This sequence also exemplifies how neither the images nor the voiceover, mostly from contributors to the Airspace Tribunal's hearings, are illustrative of one another; rather they are adjoining and intersecting texts that associatively interweave with each other. Through such a palimpsestic structure of images, sound and voices, Illingworth examines diverse topologies of air in different historical periods and locations, across shifting scales and critical perspectives. The video unfolds thematically on issues concerning pollution and environmental degradation, airspace and outer space surveillance and their economic as well as military exploitation, and air violence. Throughout, the kinetic qualities of images (speed, internal shifts of scale and focal points) across the three screens installation together with the ways in which sounds interplay with them intensify the feeling of being drawn into the *airspace* of the work itself (Fig 2).

Images of flickering leaves filmed from the ground alternate with aerial views of cityscapes and brightly lit urban skylines, satellite images of the earth and the atmosphere, and wide angled views captured by drones. Shifts of scale and viewpoint are congruent with how airspaces are subdivided in the troposphere (the part of the atmosphere closer to the earth), the stratosphere and outer space, and with the forms of access, hegemony and knowledge production that characterize each of them, including their different gaseous

formations, and strategic and economic relevance. Illingworth relates such scientific insight and the imaging enabled by advanced technologies to cosmological myths and stories that also contain knowledge about the skies as it developed across cultures and epochs, suggesting complementary ways of perceiving and understanding the immersive space that surrounds us. Historically, the skies have, in fact, been a referent for our own positioning on earth and for grappling with questions about the existence of life on this planet. Hence, as *Topologies of Air* suggests, the skies have acted as an horizon of knowledge as well as of bearing for societies on earth since their beginnings.

Today, access to airspaces offers contrasting opportunities, uses and interpretations. Illingworth is careful in including such antithetical positions in the voiceover as diverse views of the sky move across the screens (Fig. 3). Hence, according to tree physiologist Sebastian Pfautsch, access to airspaces afford us the collection of ecological and other data:

Climate change, sea level rise

absolutely rely on access from above and the view from above

all these processes we are documenting from above

at different spatial and also temporal scales

related to deforestation, illegal mining, agricultural activities, soil, coastal erosion, human trafficking

but also urban planning, infrastructure assessments that we actually use aerial technology now for, terrestrial mapping of various manmade and natural ecosystems, all rely on access from above (Illingworth 2021, voiceover).

At the same time, according to Sophie Dyer, airspaces also betray the inequalities and supremacy that underpin air violence:

In terms of the kind of optical regime

where there's a kind of asymmetry of power

and an asymmetry of access to satellite information

that's intelligence, surveillance and reconnaissance,

which is absolutely integral

to contemporary air dominated campaigns

that kind of intelligence

that is gathered through drone feeds and satellite imagery

is what will then determine

if the strike takes place or not

so that kind of asymmetry of power

is shifting even further

towards governments and for profit companies

being those who have the commanding aerial perspective (Illingworth 2021, voiceover).

Throughout *Topologies of Air*, Illingworth engages with the complexities and contradictions that denote today's perception and understanding of airspaces to convey a multilayered picture of consequential effects and affects. This further relates to the historical colonization of the skies and its consequences.

Illingworth conveys the feelings of elation about the development of aviation in the first decades of the twentieth century through the inclusion of archival film footage of crowds cheering then bringing them to bear the impending and ever-expanding threats posed by the economic and military exploitation of the atmosphere. Images of early flights are intersected by the voiceover commentary that refers to the original 'aspiration' of what was believed to

be 'the beginning of a new aerial age' that would bring a 'new way of life' characterized by the promise of 'democracy, equality, and freedom' (Lindqvist quoted in Illingworth 2021) (Fig 4). The first flights seemed like a 'step into a new element', where bodies could 'move free in three dimensions' (Lindqvist quoted in Illingworth 2021), giving new breadth to life itself. Indeed, 'Flight' – as Peter Adey puts it – 'would elicit a new way to express our relation with air. It could liquefy the solid footing of the ground, yet somehow make the air that bit more tangible, that bit more 'there''(Adey 2014, 55). Air, however, also made itself felt. Illingworth contrasts the evocation of such exuberant aspiration with war images of parachutists drifting in midair before landing on enemy soil and of air-raids allude to the military deployment of aviation and the fear with which the air began to be imbued (Sloterdijk 2009, 22-28). She colors these archival images purple-red, thus intimating their emotional contamination brought about by the militarization of airspaces.

Topologies of Air then shifts to archival film footage of the NASA Voyager program in the 1970s and of the European Space Agency suggesting the postwar international race for the colonization of outer space. These images are juxtaposed with ones taken by drones and satellites: a reference to the complex economic, military and governmental matrixes of power and control that dominate today's airspaces from the troposphere to outer space.

Within this layering of historical and contemporary outlooks on the skies, Illingworth examines how our existential connection to airspaces has been altered by technological advancements and by what can be regarded as diverse forms of pollution – environmental, informational and emotional pollution. We see images of an oil field in Bahrain as we hear geologist Giusi Maggi describing her fascination with the atmosphere's make-up and the slow formation in it of oxygen which took billions of years to develop (Fig. 5). This sequence is juxtaposed with satellite views of the earth and images of gas flares being burnt off in the oil field alluding to the release of toxic gases. The focus shifts to slow-motion images of two

children leaping in the air on a purple-red background, as they rise and fall. The slow speed of the frames heightens the lightness of their bodies, dark ghostly breathing shadows suspended in mid-air (Fig. 6). As in the case of the earlier historical footage on the beginnings of aviation, the tinted images are suggestive of contamination, specifically of the high levels of monoxide and toxic gasses polluting the atmosphere worldwide. The internal movement of these images is comparable to Tim Ingold's description of the pattern of the weather as one 'that is continually being woven in the multiple rhythmic alternations of the environment – of day and night, sun and moon, winds and tides, vegetative growth and decay, and the comings and goings of migratory animals'(Ingold 2012, 76). Ingold underlines the continuity between soil, sea and air, the terrestrial and the atmospheric. Airspaces are inseparable from life on earth. However, they are also the sites of contested practices, raising the question of how to adequately address the complex patterns of economic and political control that put them at risk. The closeup of the carcass of a dog that appears on the screen as images of extraction parallel it signals the deadly effects of chemical pollution in the atmosphere. As human rights expert, Conor Gearty, comments,

We are at the moment being poisoned on a daily basis

there is maybe some connection to be made between the atmosphere up here as it were

from which things can fall on us

and the atmosphere around us that can infiltrate and destroy us (Illingworth 2021, voiceover).

As we hear Gearty's words, the image of an atomic explosion, reddish against a black background, links air pollution with air violence, introducing a reflection on radioactive contamination.

Radioactivity, with its long decay, is emblematic in Illingworth's work of atmospheric annihilation or what, quoting Svetlana Alexievich, she refers to as 'a catastrophe of time' (Alexievich quoted in Illingworth 2021). Purple-red-colored and slow-motion images of children in uniform that Illingworth filmed in Peace Square in Hiroshima traverse the screens (Fig. 7). The children appear as ghostly silhouettes, while the voiceover (in Japanese with subtitles) includes excerpts of conversations that Illingworth recorded with survivors of the nuclear bombing in August 1945 about their personal memories. We hear an elderly man recollecting when as a child he was begged to share the small peach he was holding by people burnt by the heat of the atomic explosion; we hear of a woman who waited her entire life for the return of her disappeared daughter never locking her front door for fear that she might not be able to enter the house. The internal connections across the three screens is congruent with the associative interaction of memories, while interference and repetition suggest the rupture that trauma causes to remembering with its insidious recurrence. Illingworth intersects the close-up of a girl walking toward the camera with those of the closing doors of a tram and the images of the leaping children's rise and fall (Fig. 8 and Fig. 9). In these sequences, the dark silhouettes of children are the ghosts of our own present, whose shadows linger as afterimages, while the slow fading of the frames creates a feeling of estrangement as the undefined space of the carriage's threshold disappears. The section concludes with an account of the phosphorous blue lights of decaying bodies, believed to be, at the time, floating spirits, that filled the air of Hiroshima, visually rendered as bright fluorescent lights flicker among tree branches.

The intensified color of the footage filmed in Hiroshima alongside the recollections of survivors of the atomic bombing creates an indefinite and liminal vision where past and present overlay, and the future alluded to by the children is already compromised by an ongoing catastrophe of which we are amnesic. In this indeterminate temporality images and

sounds of burning intersect present day street shots of Hiroshima. It is as if fire were consuming the video footage itself, while low pulsating metallic sound frequencies cut through Illingworth's repetition of frames. According to Michel Serres, the explosion in Hiroshima marks a moment in which history has ever since been 'enveloped' (Serres 2010, 58). Indeed, for Serres, fire itself is emblematic of what he calls 'the appalling history of victories, the appalling history of the dominant and the killers' (Serres 2010, 67) that consumes the past. Through the sound of burning Illingworth evokes the "enveloping" disturbing presence of Hiroshima's nuclear attack on the present as much as history. The singularity of that event is inscribed in temporal duration whereby the long decay of radioactivity overlaps with the foreboding of its consequences giving raise to what, Gabriele Schwab refers to, as 'nuclear necropolitics' to explain the type of violence and long-lasting contamination of nuclear armaments (Schwab 2020a, 18). Necropolitics describes the relationships between sovereignty and the power to rule on life and death; nuclear weapons, as Schwab argues, add 'a new and sinister dimension to this power. The power of nuclear weapons can now be used to dictate not only who may live and who must die from a nuclear attack but also how some people must live with and die a slow death from the lingering effects of nuclear contamination' (Schawb 2020a, 18). This results in the control of bodies and minds exercised by what can be regarded as a new pervasive form of colonialism and of its related politics of fear (Schawb 2020a, 18-19). As Schwab observes,

> The waves of invisible radiation that had infiltrated the survivors' bodies continue the warfare indefinitely and out of sight, so to speak. Beyond its immediate annihilating destruction, the atomic work of death continues to operate as a form of slow violence inside the bodies of victims […]' and as 'a spectral haunting' from both the past and the future (Schwab 2020a, 192-193).

This haunting alludes to the past of nuclear contamination but also to the contingent threats posed by ecological violence and chemical wars.

In *Topologies of Air*, Illingworth deploys the constant changes of scale from ground to aerial views and the internal movement of the images themselves to formally contrast the scopic paradigms typical of universalizing visions from above. Understanding emerges, instead, through movement and an awareness of the shifting sensations that the immersive space of *Topologies of Air* creates. Within this changing affective environment, Illingworth interweave scientific and animistic views of the atmosphere to articulate what, in the voiceover, Toral Gajarawala refers to as 'a decolonial cosmology' that encompasses different belief systems and forms of knowledge about the skies. Hence, we hear the call of shaman and spokesperson for the Yanomami people in Brazil, Davi Kopenawa Yanomami, who voices the cry of the earth asking for protection. The images on screen show views of the earth spinning as recorded from the International Space Station and then aerial views of night lights in cities worldwide in a juxtaposition of technocratic and shamanic ways of knowing both at a global and local scale. Illingworth then superimposes a rain of digital codes on images of people moving in an urban environment to address today's instability of airspaces as sites of surveillance and economic and military control, ruled by the collection of the metadata produced by mobile technologies and used to map the increasingly detailed life patterns of millions of individuals (Fig. 10). These digital traces swirl around the earth like a weather formation. The initial digital renderings of the globe return as information systems and machine-to-machine communication assemblages, suggesting the increasing overlap of air and cyber spaces as today's contested sites of control and potential warfare. In such atmosphere saturated with data, Illingworth inflects the collusion of technological connectivity with the erosion of privacy effected through digital surveillance marking the disappearance of the last remaining spaces of unsupervised freedom. *Topologies of Air*

concludes with the words 'the future is internal' perhaps alluding to such penetration from above to one own's most minute bio-data. Then, the digital rendering of the electro-magnetic fields of the globe dissolves into images of the sky accompanied by the chirping of birds.

Topologies of Art: Illingworth's immersive art practice

To stay with this concluding sequence as the complex fabric of images, words and sounds that Illingworth has unfolded still swirls and envelops us means to stay in the space that *Topologies of Air* has generated and with the questions that the work has raised, as we make them our own. For those familiar with Illingworth's practice this is not unusual. *Topologies of Air* has created its own distinctive atmosphere while critically engaging with what makes atmospheres themselves. In this particular case, one is asked to unpack the intricate relations of place, time and discourse that characterize the vast gaseous wrap that we call the skies. The themes Illingworth deals with in *Topologies of Air* are enormous. They are massive in scale and complexity because their globality and temporal span encompass both past and future with the magnitude of their potential impact – be it ecological consequences on eco-systems, military, political and economic control, or the effects of the dominance of airspaces on our individual lives and emotional well-being. The engagement with such themes is not new for Illingworth for it has developed out of her extensive research and interdisciplinary collaborations informing her art practice. Hence, *Topologies of Air* is the result of an artistic trajectory that investigates airspaces across a number of works. These include *The Watch Man* (2007), *Balnakiel* (2009), *216 Westbound* (2014)[1], *Lesions in the Landscape* (2015), *Time Present* (2016). By considering two of these works, *Balnakiel* and *Lesions in the Landscape*, I shall examine how the role of collaboration, the thematic notions of airspace and air violence, and the formal relations of image, sound and movement inflected in these

earlier works inform Illingworth's approach in *Topologies of Air*, that was first conceived as part of an artist research residency in the Outer Hebrides in 2012, at the same time of *Lesions in the Landscape*, and developed as a series of blueprints that led to extensive research and the collaboration with human rights expert, Nick Grief.

An important feature of Illingworth's art practice is, in fact, her methodological approach whereby the research process underpinning the creative process develops in dialogue with experts in diverse fields over extended periods of time. Hence, the collaboration with Grief is a continuation of and dialogically in relation to other collaborations. Illingworth's examination of memory, specifically of trauma and amnesia – subjects that are critical to the Airspace Tribunal itself – is grounded on her long-term collaboration with cognitive neuro-psychologist Martin A. Conway in *Balnakiel* and more recently also with neuro-psychologist Catherine Loveday in *Lesions in the Landscape*.[2] *Balnakiel* examines the affective geography and spatial politics of Balnakiel, a former military camp near the village of Durness in the north of Scotland, on the edge of the Cape Wrath Bombardment Range whose strategic position has been geopolitically key during World War II, the Cold War in the 1950s and during the War on Terror in the 2010s. The Range, which is considered especially advantageous as it enables a 360 degree coordinated land, air and sea attack with live munitions and weapons, is used for the training of British, NATO and allied forces to be deployed in conflict zones across the world. In *Balnakiel* Illingworth explores the historical legacies of the eighteenth and nineteenth-century Highland Clearances, and the tense relationships between the local inhabitants and those who moved into the region in the 1960s and the military through the affective landscape of the place. Throughout, Illingworth references a spatial understanding of memory that is volumetrically layered and continually changing to map the intersecting of past and present, of local and global dynamics of influence and military control, of internal and external points of view (Albano 2016, 101-

109). The dialogues with Conway grew around and took the form of a series of drawings that convey theoretical models that explain the processes underlying recollection for both the individuals and groups who live in the area and how memory defines their relationships with the surrounding environment. These drawings, together with others that chart the military use of the airspace and the simulation of training operations, underpin the conceptual development of *Balnakiel* as Illingworth layers these diverse kinds of mental maps, whose coordinates are emotional and sensorial as well as cognitive and geopolitical, onto time-based (filmic and photographic) documentation of the region to create the associative structure of the work. Illingworth's collaboration with Conway is, thus, dialogically embedded within the artistic investigation and formal development of the final work (Illingworth and Conway 2011, 74-107). Such a methodology is also evident *Lesions in the Landscape* and underpins the palimpsestic structure of *Topologies of Air*.

In *Lesions in the Landscape*, a three-channel video and sound installation in which the geological, socio-cultural, and political history of the island of St Kilda, a volcanic archipelago west of the Outer Hebrides in the North Atlantic, that has undergone century-long cultural erasure through derogatory or romanticized accounts of the life on the islands culminating with the final evacuation of its inhabitants in 1930, is intersected with an individual's experience of amnesia. For this work Illingworth collaborated with both Conway and Loveday and with Claire – a woman living with retrograde amnesia (the inability to remember the past), anterograde amnesia (the inability to form new memories) and prosopagnosia (the inability to recognize faces).[3] This core collaboration was further expanded to include experts in disciplines as diverse as archaeology, geology, genetics, military strategy and media studies. Contributions were mapped across a series of five forums that addressed embodied experience through different forms of practices (clinical, scientific and artistic) consolidating the decentering approach that defines the Airspace Tribunal. [4]

For the latter, Illingworth and Grief chose the overtly performative format of public hearings, which is congruent with the aim of this project, and an understanding of human rights as a living instrument that challenges the traditional state centric approach to international law (Hoskins and Illingworth in this volume). The hearings build an interdisciplinary body of evidence and first-person testimonies from those who experience violations of airspaces, that is further captured by the voiceover of *Topologies of Air* whose short extracts retain the vividness of the hearings' presentations enlivening the ideas put forward with warmth and passion. This multiplicity of voices is significant since it introduces a different dimension in the work. As Illingworth herself remarks in an interview with Gaëtane Verna, 'For me, voice can take multiple forms, evoking a multiplicity of registers, affects, and meanings. It can challenge singular constructions of the past that disenfranchise people and environments, releasing them from perpetual narratives of failure and irretrievable loss' (Illingworth and Verna 2022, 81-82). Accordingly, in the context of *Topologies of Air* and of the Airspace Tribunal, it further unravels the complexity and interrelationship of the issues presented not from singular disciplinary standpoints but rather from diverse and even divergent positions capable of encompassing multiple perspectives, manifold forms of knowledge and cultural interpretations. In this sense, through her collaborative research practice, Illingworth develops a decentering approach that strives toward a "decolonial cosmology" as methodologically built within the work itself.

In *Topologies of Air*, the formal features of viewpoint, scale and movement are integral to the articulation of such methodology in ways that are already evident in *Balnakiel* and *Lesions in the Landscape*. Both works testify to Illingworth's extensive investigations of airspaces, especially in terms of their diverse constructions and forms of dominance, and of the types of approaches she has developed to deal with air as a filmic subject. In *Balnakiel* the shift of planes and viewpoints is indicative of how Illingworth harnesses the physical

features of the landscape as a medium in which the environment actively interacts with the social, economic and cultural components that characterize this place and its contested appropriations. Close-ups of a small flower or a hanging cloth moved by the wind interspace aerial views of the ground marked by stone edges and long-plane views of the barracks that testify to the militarization of the region. The camera roams the empty walls generating a disorienting feeling of enclosure that is emphasized by images of a goshawk trapped inside a room rapidly flapping against a window frame (Fig. 11). Images filmed from the Range Control Tower convey the detached surveillance perspective of the military, while the barrenness of the concrete walls corresponds to the erosion of the ground and of the coastline (FIG 12). The relentless wind accentuates the feeling of harshness. This is matched by the use of sound and movement, as evinced in a sequence in which the camera follows the movement of a girl spinning with a rope on the flat roof of one of the barracks. The intermittent horizontal sound of the rope slicing through the air mixes with the deafening downward thrust of a helicopter engine directly above and a series of rising sound frequencies. The viewpoint of the girl spinning interweaves with that of an external observer as color and black-and-white images seamlessly intercut producing a visual and acoustic vortex for the viewer while low-frequency sounds compress the installation space itself. The effect is a physical sense of oppression (Albano 2011. See also Albano 2013).

In *Topologies of Air*, the militarization of air and its latent foreboding continue as important themes in Illingworth's investigation of airspaces, encompassing both the local and global interface of contemporary geopolitics whereby the effects of events in one location reverberate across atmospheric planes as well as longitudes. Hence, images of a blue sky and the sound of a jet taking off slowly change to those of clouds that morph onto eroded ground, and then further shift to a landscape at dawn on which a horizontal line of fog lingers as the camera focuses on a desiccated tree (Fig. 13). Over the background sound of one repeated

cutting note we hear the voice of a former Iranian conscript and now artist, Majid Rabet, recounting the effects of a chemical attack.

It's out of imagination

nothing alive

nothing, animals, sheep, cows, kids, women, men

all bleeding from mouth and nose

you can feel how they died from pain

our imagination is about the bombing, bullet and

but that was chemical weapons

and that's nothing alive there

nothing

it's I think stuck in my memory I never can

forget it (Illingworth 2021, voiceover).

The images of dawn morph again onto close-ups of dry, cracked earth that gradually shift to those of a dense low cloud, then to high aerial views and a sequence shot in the departure lounge of Sharjah airport. Illingworth links these images to video footage of GR4 Tornado jets bombing Garve Island in the Cape Wrath Range close to Balnakiel, as a pilot reports back to the Control Tower (Email communication with the artist), and intersects them with footage of a US Predix drone swarm coordinating a simulated hunting operation. The deafening, terrifying noise of this machine-led operation connects the preponderance of air control examined in *Balnakiel* with the de-humanized violence of the current militarization of air and ecological damage of chemical contamination, pointing to the intersecting of today's digital warfare with its environmental consequences and, at the same time, conveying the

oppressiveness of artificially coordinated war operations through the sensorial density of this sequence.

Here is also evidence of how Illingworth harnesses movement – as both what we see on screen and the internal flow within a frame – to deal with atmospheric disturbance and render the dynamic volumes typical of air topologies. The repeated sequence in *Topologies of Air* of two children leaping is comparable to that of the girl spinning with a rope in *Balnakiel*. In both instances, Illingworth focuses on the kinetic force of these buoyant activities, whose playfulness seems at odds with the contexts in which they are presented. Both movements have a propelling force that Illingworth uses to generate disturbance through the manipulation of the images themselves (shifts of color/black and white in the first case, and different gradations of color and alteration of the image speed in the second). This intensifies the sensations respectively of rotation and of upward thrust and the momentous suspension of the bodies in mid-air. Although, as a viewer, one feels the energetic pull of the leap or rotation, the effect is one of vertigo and compression. Oppression is felt as an impending presence. Illingworth refers to them as 'liminal images' to stress their intentional indeterminacy, impasse and disturbance (Email communication with the artist).

Liminality is an important feature in *Topologies of Air*, especially in relation to the palpable rendering of air itself conveyed through the internal speed and flow of images. Illingworth modulates the single frames by layering them on specific sequences of sounds with varying rhythmic, tonal and textural shifts that are removed in the final work, but that nonetheless affect them by shaping the quality of the movement of images on screen. Hence, the impression of being drawn into the boundlessness of air through the uplifting movement of aerial views is contrasted with the warping of this movement within and across the screens whether through the impending condensing of air into matter or through shifts of scale and approximation (Fig. 14). As a result, movement itself acts as latency within the images and

across the three screens. The 'radioactive signature in the geological record' – in Jan Zalasiewicz's words, quoted by Illingworth in the voiceover – indicating the radioactive nuclides found in the Antarctic ice, figuratively corresponds to the emotional signature of fear and trauma in the atmospheric layers that have been increasingly occupied, exploited and contaminated with pollution and violence. The dynamic expanding and folding of images thus embody the multidimensionality and intersecting temporalities underscoring the discursive understandings of airspaces.

In *Topologies of Air* Illingworth also continues an exploration started in *Lesions in the Landscape* of shifting scales, from the magnitude afforded by satellite images to the ground detections of GPS systems, from the local parameters of a place, event or experience to their global resonances, implications or impact. Evacuated in the 1930s and a UNESCO heritage site, St. Kilda is today a key military outpost as a satellite-controlled area and a military testing zone for new generations of weapons – the archipelago and the surroundings are a silent airspace area extending for 30,000 square kilometers. Such strategic importance dates back to 1959 when the area became key to Britain's nuclear program. St. Kilda is also an archaeological site and the local Soay sheep are studied for their genetic profile in research on the effects of climate change on bio-systems. Illingworth includes references to the military telemetry tracking weapon testing, to exchanges between American and Russian operatives who co-operatively guide a supply ship docking onto the International Space Station, and to the ground mapping of St. Kilda's archaeological traces through GPS (Fig. 15). An amalgam of inputs, whose varying degree of accuracy is relative to the level of approximation that can be technically achieved, the signal data define the virtual and shifting parameters of specialized knowledge and the different 'visions' that they afford: the scale of military testing and the airspace program suggest interchangeable, if not conflicting, geopolitical alliances and an evolving picture of power relations across the globe while the

micro scale introduces indeterminism and uncertainty. These spatial scales further intersect

different forms of duration and temporal constructions that relate to Illingworth's exploration

of memory. [5] Duration as the extended timeline of the geological formation of the island is

rendered through a recurring sequence that shows a slow-motion filmed sequence of

crumbling rocks cascading into the sea, suggesting a petrification of time and further relating

to views of the archaeological remains that date back 4,000 years testifying to the cultural

erasure of the people who lived on St. Kilda (Fig. 16). By contrast, the collecting of micro

data on military testing is situated in the infinitesimal contingency of constant obsolescence

while its relevance is projected in the near future of potential military operations.

Petrification and cultural erasure, thus, act as signs of the amnesia denoting this supposedly

remote and yet strategically critical place. Within these diametrical perspectives, St. Kilda is

suspended in the indeterminacy of the isolation that characterizes the immobility of its

cultural construction as a heritage site and of the related idealized presentation of its past

(Albano 2016, 109-121).

This seamless integration of and shift across different spatial and temporal scales also

underscores *Topologies of Air* where it is amplified in both range and span to render the

granular effects of climate change and environmental pollution as well as the increasingly

dense mass of metadata swirling around the globe. The short obsolescence of such metadata

contrasts with the duration of radioactive, chemical and emotional contamination that reaches

from past events into the future. As suggested for *Lesions in the Landscape*, the visual and

sonic interweaving of macro and micro data tracking defines the parameters of diverse

constructions of airspaces and their meanings both past and present. The cross-cultural

conception of the skies as limitless and liminal to our existence on earth has been replaced, as

archaeologist Steffen Terp Laursen observes in *Topologies of Air*'s voiceover, by 'a more

manifest sense of the sky above us' afforded by technological and scientific advancements

(Illingworth 2021, voiceover). At the same time, as Schwab argues, the atmosphere is

increasingly imbued with ontological, epistemological and psychological fears, as it bears the

mark of latent events whose vastness contends with the immanence of space and history and

with the boundaries of knowability and representability (Schwab 2020b). As digital media

expert William Merrin comments, artificial intelligence and surveillance data collection have

also become phenomena comparable to 'a vast weather system' for their complexity and

impinging presence (Illingworth 2021, voiceover). Such technologies, according to media

sociologist Andrew Hoskins, are increasingly dehumanized and deindividualized, generating

'a sudden mass vulnerability, an exposure that seems impossible to contain' (Illingworth

2021, voiceover). The interface that today happens with "the outside of the body" could shift

within the body itself, merging inner and outer surveillance, as Merrin's concluding claim,

'the future is internal' (Illingworth 2021, voiceover), seems to imply.

Rather than with the empty openness and awe with which the skies have been traditionally

endowed, we are confronted with the saturation of information that characterizes the

contemporary perception of the atmosphere. Airspaces are thickening on us as sites of hostile

surveillance and otherness, while ecosystems are put at risk by atmospheric changes and by

the insidious contamination of matter and affect. What ensues is a feeling of foreclosure. The

appearance and fading of fluorescent flakes, of a vaporous lingering line of fog on the

horizon or the overlaying of a digital rain of data are visual signifiers of such insidious

presence that Illingworth renders more acutely unsettling and liminal by the ways in which

sounds distort the immersive atmosphere of the work. The spatial compression and

subliminal disturbance that acoustic interference causes — a characteristic in Illingworth's

practice — counteracts the views from above and the hegemonic perspective that typifies

them. While, within the context of the work, individuals increasingly disappear in the trace of

metadata that they leave behind, we, as viewers, are swathed by the affective textures of these

topologies of air as they evaporate from the screens in the *unheimlich* view of a blue sky (Fig. 17).

An ethics of air

'[T]here is something very special about having the freedom to look up at the sky without feeling threatened' (Grief 2020), writes Nick Grief about the proposed human right to live without physical or psychological threat from above. Such a right, as Grief explains, 'would be a qualified right, not an absolute one' meant to strengthen international humanitarian laws by regulating airspaces (Grief 2020). This raises the question of the critical, rather than legal, significance of such a proposition in relation to *Topologies of Air*. As Conor Gearty maintains,

The language of human rights

is among the very last of the languages available to us

to fill a gap in our understanding of the world

which is rooted in equality, esteem and empathy (Illingworth 2021, voiceover).

I would add that art-practices are another of those languages. As Illingworth herself comments about her approach,

> I've worked for many years with people and communities whose knowledge and life experiences have been marginalized. Their experiences are central to understanding the invisible social, political, and cultural architectures we inhabit. Reclaiming spaces of imagination, creativity and agency has been central to my development of aesthetic processes in which different conversations, critical thinking, and explorations can become active and produce new cultural meanings (Illingworth and Verna 2022, 83).

Critical to the invisible architectures explored by Illingworth is a questioning of the structures that support the geopolitical hegemony of airspaces whether as military training, ballistic trials, or colonial matrixes of control and exploitation, and an investigation of the rippling effects of air violence across places and time, as evinced by *Balnakiel* and *Lesions in the Landscape* as well as *Topologies of Air*. Here, Illingworth generates new understandings by integrating a plurality of voices, viewpoints and experiences across diverse epistemologies, scales and timeframes and by creating an empathic engagement with the core ethical concerns that inform the work. The topologies of air that emerge are like volumes in motion whose spatial and temporal co-ordinations intersect affectively and discursively, though they remain unfixed in the circulation of meanings that association and emotional resonance generate. This partakes to an ethical engagement with the discourses mobilized by digital war, metadata surveillance, and ecological justice that takes into account historical legacies and their residual 'atmospheric' presence, situating today's airspaces at the nexus of past violence and the foreboding of impinging futures – whether those are dominated by pollution, machine-led warfare or exploitation and colonization. Rather than focusing on technologies and the ways in which they impact on surveillance and warfare, *Topologies of Air* brings to the fore the diversity but also interconnectivity and mutual implications of today's atmospheric threats, suggesting the interrelating of the discourses that deal with them.

Such an approach resonates with Maria Puig de la Bellacasa's argument regarding the necessity to consider soil through practices of care that involve different scales and timeframes, challenging traditional boundaries of ethics to include the connections and interrelationships that bind human and nonhumans including matter whether soil or air (Puig de la Bellacasa 2017, 9-17, and 28). For Puig de la Bellacasa, 'Attention to concerns brings us closer to putting forward a practice of care as something we can do as thinkers and knowledge creators, fostering also more awareness about what we care for and about how

this contributes to the world' (Puig de la Bellacasa 2017, 41). *Topologies of Air*, as suggested, decenters hegemonic visions through shifts of scale, movement and acoustic disturbance, thus deconsolidating single or exclusive forms of knowledge production by inflecting multiple ways of experiencing and comprehending the skies, encompassing understandings that would otherwise remain marginal, as shamanic insight or indigenous rituals, and reclaiming them *vis à vis* the epistemologies by which they have been traditionally suppressed (Minolo 2002, and 2011). Shifts of scale and the approximation inherent to them – as evident in *Lesions in the Landscape* – concern a critique of the supposed abstraction from material contingencies and hence assumed precision of systems of measurement and of the technologies that deploy them for peaceful as well as armful purposes as another form of a colonial template whose claim for accuracy has yet proved to be fallacious (Mitova 2020). In *Topologies of Air*, such critique of "absolute" forms of knowledge and of their alleged exactness further implicates the collection and use of digital data of pervading surveillance systems that impinge on the everyday life of citizens worldwide. The opening and closing sequences respectively inflect the current and potential risk posed by forms of surveillance that move from airspace to micro bio-data, conflating scales and outer and inner spaces. The open question with which *Topologies of Air* concludes lingers with its ominous resonances as we look at a eerily familiar sky. The attention to airspaces that the work solicits is, thus, rooted in 'an incredibly fluid dynamic aesthetic' that creates 'an affective ecology of ideas and perceptions, and emotional, conceptual, and critical registers across image, sound, atmosphere, and space to move people towards a sense of the phenomenological experience of others and intimacy with the critical issues that the work explores' (Illingworth and Verna, 2022, 83). This aesthetic, as suggested, articulates an ethical understanding of air as critical to questioning of today's warfare practices and ecological risks (Fig. 18).

In a time when the erosion of commons and liberties by governments and corporations restricts what Jacques Rancière refers to as the 'distribution and redistribution of places and identities, [...], of the visible and invisible'(Rancière 2009, 24), both *Topologies of Air* and the Airspace Tribunal create what Gearty refers to in terms of human rights language as 'a momentum for change without necessarily, in singular acts, achieving change' (Gearty quoted in Grief 2020, no page n.). While the body of evidence gathered through the Airspace Tribunal can be used to achieve legal change, the immersive space of *Topologies of Air* dynamically holds the multiplicity and plurality on which intimate connections and empathic responses can ensue as viewers engage with the complexities of today's topologies of air. Such engagement is sensorial and emotional as much as cognitive since mapped on diverse experiences and epistemes.

Puig de la Bellacasa writes about soil: 'Modes of soil care and soil ontologies are entangled: what soil is thought to be affects the ways in which we care for it, and vice versa'(Puig de la Bellacasa 2017, 170). The same could be argued for airspaces as their ontologies, epistemologies and ethics cannot be separated nor considered within limiting approaches. 'The freedom to look up at the sky without feeling threatened' calls for ways of talking about and looking at the skies that 'are rooted in equality, esteem and empathy' (Grief 2020). *Topologies of Air* creates a space for empathic understanding of the skies and a recognition of responsibility as a 'relation always already integral to the world's ongoing inter-active becoming and not-becoming'(Barad 2010, 265). In such a space the possibility of a human right to protect the freedom to live without physical or psychological threat from above is a vision for an ethical reconfiguration of our immersive relations with airspaces, a way for reimagining the contemporary topologies of air.

[1] The video work *216 Westbound* was developed in collaboration with media sociologist John Tulloch. The work relates the effects of Post Traumatic Stress Disorder experienced by Tulloch, a survivor of the 7/7 London attack, to the latent threat and fear that pervaded the city at the time. The work examines the consequences of the terrorist attack at the intersection of embodied experience, media reporting and the machinery of state control.

[2] Illingworth's collaboration with Martin Conway started with *The Watch Man*, a work that deals with the fragmented traumatic memories of an elderly man, Illingworth's late father, who was among the UK military who entered the concentration camp of Bergen-Belsen when it was liberated in 1945.

[3] The collaboration with Claire also include *Time Present*, a video work which focuses on her experience of amnesia, whereby not only she is unable to remember the past and form new memories, but also to project into the future. Claire lives at the edges of a continuous limited temporal space: the present. In this work the enclosure that amnesia causes is rendered through the use of camera angles and the visual focus on thresholds and edges, like windows' pane and sills or furniture's edges.

[4] The Airspace Tribunal was conceived and established by Nick Grief and Shona Illingworth. The inaugural hearing was at Doughty Street Chambers, London on 21st September 2018. The first three Airspace Tribunal hearings were held between 2017-2020 in London, Sydney and Toronto. Related events included the Sky Forums that Illingworth organized during two residencies at, respectively, the Sharjah Art Foundation in the United Arab Emirates and the Bahrain National Museum.

[5] Albano, *Memory, Forgetting and the Moving Image*, 109-121. Sounds also include the buzzing sound of an energy generator on the island and the sonification of the signals of an electroencephalogram of Claire as she attempts to recall memories.

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