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Topologies of Air and the Airspace Tribunal: Shona Illingworth and Anthony Downey

Abstract
Can we deploy creative practices to critically address the fatal interlocking of global surveillance technologies, neo-colonial expansionism, environmental degradation and the lethal threat of drone warfare? Throughout the following conversation, Shona Illingworth and Anthony Downey examine these and other
questions in relation to the recent publication of Topologies of Air (Sternberg Press and The Power Plant, 2022). Edited by Downey, the book includes discussion and documentation of two major bodies of work by Illingworth, including Topologies of Air (2021) and Lesions in the Landscape (2015), alongside an extended series of essays that analyse the psychological and environmental impact of military, industrial and corporate transformations of airspace and outer space. Employing interdisciplinary research and collaborative processes, Illingworth’s practice, as detailed in the discussion below, uses creative methodologies to visualize and interrogate this proliferating exploitation of airspace. The conversation between Illingworth and Downey also outlines the work of the Airspace Tribunal, an ongoing series of public hearings that brings together diverse disciplines, methodologies, knowledge and lived experiences to propose a new human right that will counter the colonization of the sky and, in time, protect individuals, communities and ecologies from ever-increasing threats from above.

Anthony Downey (AD): I want to start with our book project Topologies of Air, which was published by Sternberg Press with The Power Plant in 2022. We focused on two major works by you, one being Topologies of Air, which was completed in 2021, and the other being Lesions in the Landscape (2015). I recall the sense of enclosure if not claustrophobia, when I first saw Topologies of Air; it felt overwhelming, both visually and in terms of content. There was also a lot of research being presented through the practice – or the forms of practice-based research that you employ – that was focused on how you effectively visualize the occupation of territorial and extra-territorial space, and how we understand political, social, cultural and historical realities that pre-empt and maintain those processes. So I want to start from a fairly basic question: how did Topologies of Air come into being as a project and how did the initial research, which began some time ago, evolve over time?

Shona Illingworth (SI): I grew up in a former early warning station, in the north-west corner of the Scottish Highlands, on the edge of a major NATO live bombing range. So I’ve grown up with the experience of the sudden transformation of the relationship between a person on the ground and the sky above that occurs when GR4 Tornado jets suddenly appear out of nowhere and drop thousand pound live bombs – literally just off the coast. This remote and sparsely populated landscape, with its vast open skies, would suddenly be transformed into an environment where the sky feels like a claustrophobic lid that has dropped very low down over your head. The sonic transformation of that space is also very intense, very visceral. You feel it in your body. You feel the power and speed of those jets and also their intent. We were not the targets of those bombs. The military use the range as proxy terrain for conflict in other parts of the world. For someone in a war zone and potentially in the target area of those bombs, that experience would be absolutely terrifying. Growing up in the 1970s and 1980s, I was also very aware of the threat of sudden nuclear attack, which felt very real there and ever present. So for a long time I have thought about the sky and our relationship to it.
In 2012, I was invited by Taigh Chearsabhagh Museum & Arts Centre to do an artist residency in the Outer Hebrides, a group of islands off the west coast of Scotland. The Hebrides Range is located there. This is a weapons testing range originally built by the Royal Air Force to test the Corporal Missile, Britain and US’s first guided nuclear weapon. The range can now extend to 1,000,000 km².
and is managed for the ministry of defence by QinetiQ, a private company which leases it out to international arms companies to test complex new weapon systems. In 2016, Unmanned Warrior, then the largest military exercise involving unmanned and autonomous systems, took place there alongside a major multinational naval exercise.

The artist residency programme was focused on climate change. I was invited to explore renewable energy. My aim was initially to look at the commodification of airspace by large eco power companies, in particular wind farms. My interest was in the kind of social, economic, cultural and political impact of that commercial use of airspace.

While I was there, QinetiQ were planning a significant expansion of the weapons testing range. I read the consultation papers and quickly understood that there were only two main areas of focus. One was economic impact. The other was environmental. Economic impact centred on the threat to employment should the range contract or close. Jobs are critical to sustaining rural communities. Environmental impact was confined to what could be quantified and proven scientifically. So, for example, the effect of dropping bombs on the migration route of whales. How do we prove that? There was no reference to the long-term, pervasive impacts of expanding militarization throughout the wider physical, social and cultural ecology. I became very aware of the extent to which the sky was being instrumentalized, both commercially and militarily. I also knew that places considered geographically remote from one perspective are actually geopolitically very central from another and that while they may be out of mind, they’re absolutely key to the expansion of the corporate military industrial complex into all areas of life.

During the residency I explored the cultural and historical significance of the sky for people living in the Outer Hebrides. One of the things that emerged was the impact of the violent history of cultural oppression and land rights struggles that took place there in the eighteenth and nineteenth centuries. While these colonizing processes focused on the land, it became very clear that there’s a deeply felt connection between land, air and sky. I recorded a conversation with a woman involved in installing wind turbines on a community-owned area of land about the difference between community-owned turbines and the large corporate wind farms that were being erected on the island of Lewis. We discussed what it means to have the wind and airspace above that land commodified, quantified and turned into an economic set of units. We spoke about how the wind comes mainly from the west. From the place people emigrated to in the nineteenth century because life on the islands became unsustainable. The wind comes back across the ocean. So there is this circular narrative, if you like. It became clear that we cannot think about the military and commercial exploitation of airspace, and increasingly outer space, as unrelated to land rights struggles, cultural erasure and the existential threat of climate change.

At the same time the compartmentalization of land, air and sea and of different areas of interest obscures the complex entanglement and interconnected nature of these existential threats, not just to human life, but also to whole ecologies of being.
AD: This is what I found most interesting about Topologies of Air – the way it visualizes precisely that level of entanglement alongside the momentum behind the military industrialization of airspace. Can we explore Topologies of Air as a physical artwork itself – how, for example, you visualize the entanglements of airspace – and how that relates to Lesions in the Landscape?

SI: There are some key features of my previous work Lesions in Landscape that informed the way Topologies of Air is structured. The former centres on St. Kilda, a group of islands where one of the Hebrides Range radar stations is located. The work includes a quote from QinetiQ’s promotion of the range to international arms companies, which describes the area as a ‘sanitized airspace of unlimited altitude’.1 This not only speaks of the instrumentalization of the airspace, but also importantly the removal of any reference to human or other life. Lesions in the Landscape situates this directly against the earlier colonial vision of wealthy nineteenth-century visitors who travelled to St. Kilda in pursuit of the oceanic sublime, of the sky as an endless, vast, open void. Both representations of the sky perform acts of cultural erasure and are very powerfully present, particularly in the West. In Lesions in the Landscape the outer limit of that landscape is the International Space Station where US and Russian operatives collaborate high above the Hebrides Range, which is on constant alert for the incursion of Russian military jets into UK airspace below. This now feels as though it’s from another age.

In Lesions in the Landscape, I developed my approach to thinking about the sky from multiple perspectives and also multiple scales. This is fundamentally important to the way that Topologies of Air is constructed. For example, there is a sequence in Topologies of Air which describes the interaction between nutrients, toxic chemicals and radioactivity on a grain of sand. That grain of sand is part of the huge sand storms that have become prevalent in the Gulf region. Their scale is understood to be a consequence of the wars in Iraq, Kuwait and Syria, where the surface of the land has been damaged, and of the impacts of climate change. Previously, sandstorms played an important role in carrying nutrients into the Gulf sea, replenishing it and making it rich and alive. You then hear someone describing how the dust storms have introduced a new kind of skin sickness to the region. All the way through, Topologies of Air works across these intersections between the human, the environmental, the corporate and the military, across these very different scales, and is rooted in questions of human life and ecologies of being. A critical dimension of the work is not to sanitize conversations about technology as remote, distinct and separate from life.

AD: When you use the term ‘lived experience’ you are obviously drawing upon multiple experiences to understand the complexity of these processes and their actual, as opposed to theoretical, impact on people and communities. I was thinking here that the interdisciplinary context to Topologies of Air enables forms of humanities- and social science-based research to productively exist alongside and engage with the voices of...
Figures 2–7: Shona Illingworth, Topologies of Air, 2021. Digital video stills. Imperial War Museum, London and NASA. Courtesy of the artist. Figure 2 left and right image courtesy NASA. Figure 4 centre image courtesy the Imperial War Museum, London.
Figures 2–7: Continued.
‘lived experience’. This then becomes a question of collective agency. Could you talk a little bit more about the collaborators who were part of this project, in light of this and what they brought to it over time.

**SI:** *Topologies of Air* brings together people with diverse knowledge, expertise and experience. For instance, Kevin Bales, a leading expert on the relationship between contemporary slavery, globalization and environmental destruction, talks about the importance of satellite imagery for detecting, monitoring and addressing the abuse of human rights on the ground and issues of accessibility to that data. So what happens, for example, when corporate companies who increasingly own the technology introduce paywalls that restrict and control that imagery? Anson Mackay, a geographer, palaeoecologist and expert in environmental change, talks about the history of the weaponization of weather and questions of global governance in relation to proposed large-scale geoengineering projects to control global warming. He highlights the risks involved in maintaining such large-scale interventions and the catastrophic consequences should such systems fail. There are people

**Figures 8 and 9:** Shona Illingworth, *Lesions in the Landscape*, 2015. Three-channel digital video and multichannel sound installation, 35 min. Digital video stills. Courtesy of the artist. Figure 8 left image courtesy Scottish Screen Archives, NLS.
speaking who have witnessed the use of chemical weapons, have experienced being bombed and who survived the atomic bombing of Hiroshima.

There are people who speak about developments in artificial intelligence (AI) and the use of machine learning (ML) to exploit data for surveillance, policing and warfare, who warn of the move to an ‘information totalitarianism’, a term used by William Merrin, in a post-human future where data is collected from inside the body. There are people who speak about how we might consider the sky philosophically, ethically and culturally and how a decolonial cosmology would require un-learning the idea that one particular version of the cosmos is universal. There are people talking about the importance of human rights in relation to racism, colonial and cultural violence and the growing disparity in the global landscape of power between those who are colonizing, exploiting and controlling the airspace and outer space above and the vast majority of people on the ground.

AD: Topologies is obviously the forward facing visual element of this. But there’s an extraordinary amount of work going on behind that. I am thinking here of the Airspace Tribunal. I had the pleasure of being part of the Toronto Airspace Tribunal hearings, where I spoke about the algorithmic rationalization of extra-territorial space through ML and AI. But the Airspace Tribunal has a history behind it, dating back to 2018. While an independent project, it informs many of the elements of Topologies that we have been discussing.

SI: The Airspace Tribunal was established in 2018 by myself and Nick Grief, an international and human rights lawyer and expert in international airspace law. Nick is a colleague at the University of Kent where we met initially to discuss my work in the Outer Hebrides. In our first meeting we agreed that there was an urgent need to develop the human rights dimension of airspace. We decided to establish the Airspace Tribunal, an international people’s tribunal to examine the proposal for a new human right to protect the freedom to live without physical or psychological threat from above. I have a long history of running interdisciplinary forums. I’ve always been interested in bringing people with very different perspectives together to discuss critical questions that I am exploring in my practice. The Airspace Tribunal draws on that history in that it involves bringing people with diverse expertise, knowledge and lived experience together through a series of public hearings to examine the case for and against the proposed new human right. The hearings have included representations by almost forty people from around the world. Kirsty Brimelow KC, an expert in human rights and international law, is the first female chair of the Bar Human Rights Committee, and was the first female chair of the Bar Human Rights Committee. Andrew Byrnes was counsel to the Airspace Tribunal for the hearing in Sydney in 2019. He is an expert on women’s human rights, gender and human rights, United Nations human rights institutions, economic and social rights, peoples’ tribunals.
Many of the voices from the first two hearings form part of *Topologies of Air*. It’s important that these discussions come alive in the immersive environment of the installation that you described so well earlier. The public are invited to engage in discussions in the Airspace Tribunal hearings and also through the artworks themselves in exhibitions and other events. Human rights is a language rooted in the principles of equality, empathy and dignity. The Airspace Tribunal challenges hierarchies of knowledge production, and forms of nationalism that divide and polarize people through its inclusive processes. In this way it also challenges structures of power built on long histories of colonization, political violence and cultural oppression. It considers the development of human rights, as Conor Gearty described at the inaugural hearing, as an imaginative discourse that anticipates the future; a living instrument, where human rights need to evolve in response to a changing world.4

AD: To date there have been a number of Airspace Tribunal hearings, the first in London in 2018, followed by Sydney in 2019, Toronto in 2020 and Berlin in June 2021 in partnership with the European Centre for Constitutional and Human Rights (ECCHR).5 Obviously, there is an extraordinary amount of expertise being brought to the table, a level of inter- and multi-disciplinary research that involves both the humanities (visual culture) and the social sciences (legal, environmental and psychological discourses, in particular), but it also seems to me that you’ve been able to bring that level of diverse expertise to the table because you’ve approached it through the visual and the specific practice of artistic production. I’m wondering if you could talk a little bit more about that. I know, for example, that there are ex-military personnel who have been involved and they are often quite cagey about the technologies that are being used in contemporary warfare and to what ends.

SI: Yes, absolutely. Art practice is not constrained by disciplinary boundaries and conventions. It can expand philosophical, ethical and cultural debates, create new ecologies of thinking, discussion and action and generate new questions. Importantly, it can create new imaginaries and sensations that move people. I think that imagination, creativity and aesthetic processes are central to enabling different conversations and critical thinking and to developing new approaches to visualizing the complex global challenges that we are facing. The collaboration between Nick and me across human rights law and art practice has been absolutely central to bringing together people with such a wide range of expertise.

People who have taken part in the Airspace Tribunal have been very concerned about what lies ahead and have very much engaged with its radical approach to the development of the proposed new human right. I think that this has allowed for a greater openness to explore ideas, for creative thinking, and for people to discuss pressing questions outside of the more constrained academic frame or more closed spaces of military doctrine; and, importantly, to discuss these urgent questions with people whose experience, perspective and knowledge may be different from their own. This includes those from the military that you mentioned, some of whom have held very powerful


5. The inaugural Airspace Tribunal hearing took place at Doughty Street Chambers, London, in September 2018. This was followed by the Sydney hearing at the Ethics Centre, Sydney, in partnership with the Big Anxiety Festival in October 2019 and the Toronto hearing – in partnership with The Power Plant (online) – in November 2020, and then the Berlin hearing, conducted in partnership with the European Centre for Constitutional and Human Rights (online) in June 2021.
positions. They may be critical of the proposed new human right but have been very much engaged in the discussions.

The established legal frameworks view airspace as open and empty and map airspace using an older Cartesian model into defined territorial zones (see Grief et al. 2018). This does not take into account accelerating geopolitical, technological and environmental change or the rapid transformation of aerial threats. The multi-domain expansion of warfare, combined with the existential threats of nuclear war, climate change, pollution and increased air toxicity, rising sea levels, rapid loss of biodiversity and resource scarcity, cannot be contained within territorial boundaries. They are intensifying geopolitical tensions and are putting populations and ecologies at considerable risk. There are urgent questions about the development of autonomous weapon systems, with increasingly complex layers of software that are becoming impenetrable. There are questions of algorithmic justice, for example, concerning the use of data for predictive targeting. We are living in a time where the future is rapidly becoming a very different place. The future is being colonized through the weaponization of data and technology. We are facing devastating consequences of climate change and global warming, and constant competition is driving military expansion beyond airspace and now threatening the commons of outer space. The Airspace Tribunal brings expertise together to address these rapidly expanding threats.

There are people in the military who are aware of these threats and that there are huge ethical questions arising, for example, from increased automation of weapons systems and military decision-making processes. This is also the area that you explored in your essay, the apparently non-transparent element of the technologies involved and how we deconstruct that.

**AD:** Yes, I gave a lot of thought to this across a number of areas. It has become more and more obvious, to me at least, that through ML and algorithms the field of AI is not only rationalizing the here and now, but — through predictive targeting, projection and pre-emption — is consistently seeking to occupy the future (see Downey 2022). It also appears that the very idea of the future is a very different concept to what it was, say, a decade or two decades ago. It is a future that is both calculated and, in part, predictable or subject to a technological ordering of sorts — based on statistical prediction and ML — that renders it more compliant to the political and martial demands of the present. In the essay I wrote for the volume, as you note, I suggested that this is generating an existential crisis in how we understand the future — and how we understand our present-day relationship to the future — that is consequently redefining how we understand the very notion of life and death in legal, political and biological terms. The technology in use in AI is also often referred to as a ‘black box’, which I think is problematic because it’s not opaque technology per se. That term always seems to generate a distance between us, the users, and the apparatuses of AI-led surveillance systems that serves the interests of private companies, the military-industrial complex and the nation state. I was also thinking about legislation: how we legislate for technologies that are increasingly annexing the future and extracting
Figure 10: Shona Illingworth, Aerial Spinning Camera and Cleits, 2014. Archival pigment print, gouache and ink. 210 mm × 297 mm. Courtesy of the artist.
Figure 11: Shona Illingworth, Drones, Missiles, Telemetry, Archaeology, Stones, 2016. Archival pigment print, gouache and ink. 210 mm × 297 mm. Courtesy of the artist.
not just natural resources – as took place throughout the era of colonization – but extracting data for the purpose of reapplying and repurposing it in the name of control and dominion. In our neo-colonial epoch, the extraction and application of data has become the de facto means to discipline and dominate communities and territories in both the present and foreseeable future. Perhaps we should address that issue of legislation here, alongside emerging technologies in the sphere of AI and ML and how they relate to such debates.

SI: One of the most significant areas of concern to emerge from the Airspace Tribunal hearings is the lack of understanding about and legal provision for, the long-lasting psychological impact of threats from above. Developments in technology and warfare, such as the use of AI as you describe, mean that aerial threats can terrorize civilians living in war zones and areas of conflict indefinitely. Children are especially vulnerable. The use of predictive targeting means that civilians also suffer unrelenting anticipatory anxiety caused by fears of targeting errors, which may put themselves, their families and communities at risk. The impacts on women, children and vulnerable populations are very much overlooked. People have described from personal experience how the unexpected nature of aerial attack and the fact that the threat is unseen causes greater anxiety and trauma. These traumatic experiences can then become encoded in memory and haunt the future, across generations. Aerial violence affects whole communities and the social and economic infrastructures that support them, causing long-term instability and mental harm, as well as displacement of millions of people (see Hoskins and Illingworth 2020). Much more work is needed to understand the particular features of psychological threats from above. There is also the psychological impact of existential threats such as climate change, pollution and nuclear warfare. The threat of the relentless presence of armed technology in the sky that can surveil you and identify you as a target has potential to rapidly expand through current developments in autonomous weapons systems, AI and robotics.

And that brings me on to this question of rationalization, as you’ve described it. I think rationalization is a very dangerous term because it aligns with notions of immutable fact. It’s a way of constructing a vision of the world that is very much diminished. This also raises questions about the politics of scale. Surveillance is reducing people to data points in relation to set identifiers such as religion, gender, occupation, online activity and consumption. So what we’re talking about here is what William Merrin described at the London hearing as information totalitarianism, which imprisons, terrorizes and catastrophically diminishes and reduces human life.

There’s an extraordinary fascination with the increased capability of technology. It is extremely dangerous technology, as you have rightly described it. It’s causing huge disturbances in our relationship to the future. It is also significantly diminishing the potential of the future. Human beings and ecologies are extremely complex, and I think that there is a danger of seeing the increased complexity of technology as somehow superseding the complexity of human beings and the ecologies we
live in. That introduces a hierarchy of knowledge; it introduces hierarchies of capability; it introduces a militarized fantasy of total control and drives the constant competition for superiority which in turn is driving developments in military technological capability. In doing that, it’s reducing the representation of the complexity of human beings, of cultures, of spaces of the world into a series of data points. That’s extremely dangerous. Jutta Weber was asked at the Berlin hearing whether what we need is more sophisticated AI for greater precision targeting, for increased levels of security. She replied that one of the things that AI will never be able to do is understand context. It’s extremely good at doing things that humans can’t do, like calculations, dealing with vast data sets, which can be incredibly useful, but it cannot understand cultural or social context or determine a person’s intention, activity or who they are as a human being. Lisa Ling, a former US military drone operator and whistleblower also spoke at the hearing in Berlin. She describes how there are people in Afghanistan who have never known a time in their lives when they haven’t been afraid of the sky, when they haven’t been threatened continuously on a daily basis by death from the sky. Omar Mohammed, a historian from Mosul who was until recently only known by his blog name Mosul Eye, describes how whole families have been obliterated from the face of the earth by aerial bombardment in Mosul; how people are still looking for the remains of their loved ones, who have become nameless, who are not even counted or who are only seen as collateral damage, as statistics used for the analysis and development of urban warfare. He describes how the denial of a victim’s very existence, not knowing the name of the person who killed them, not knowing who sent the order or why it was sent, has a catastrophic impact on human dignity. The levels of transgenerational damage, not just to individuals but to whole societies and cultures has also been propagated by the sanitization of this technology and a focus on its technical capability, for instance, on the development of complex algorithms. There needs to be a much deeper discussion about the consequences of this diminishment of human and planetary life.

**AD:** On that note, perhaps we should elaborate upon this ideal of techno-utopianism and the apparent end-game of technological advance: the more technology we create, we seem to need more and more technology to control it. We also seem to have arrived at a point now where technology not only fixes people as data points, but also extracts data in order to control and dominate and discipline individuals and communities in the present and, indeed, the future. This has produced an insidious alignment: the hubris of techno-utopianism and the over-determination of our relation to it, to the extent that we seem to be sleep-walking into a future over which we have less and less influence.

**SI:** Absolutely, but we should also address here the catastrophic expansion of nuclear weapons and escalating geopolitical tensions. Particularly the increasing risks of deployment of nuclear weapons in outer space when, for example, the oceans become transparent due to technological developments.
I think a focus on drones and AI also risks losing sight of the multiple threats that we are subject to. Mass aerial bombardment that we continue to see in urban warfare, and the combined threats of global warming and nuclearization which have transformed our sense of the future and are threatening planetary survival.

**AD:** You and I, alongside Renata Salecl and Andrew Hoskins, are currently editing a volume of the Journal of Digital War that will include a dossier that will be presented to the United Nations in 2022. Let’s talk a little bit more about that as it ties in closely with the above discussion about the role of interdisciplinary research and lived experience.

**SI:** We have now completed the Airspace Tribunal hearings and are finalizing the proposal for the new human right. The military implications of the proposed right were discussed at a *Defence Roundtable* held at the Imperial War Museum, London in July 2021. A Legal Roundtable was held in November 2021 to consider the proposed right’s possible implications for military operations and International Humanitarian Law. A summary of the discussions at these Roundtables will be included in the drafting history. A double Special Issue of the *Journal of Digital War* will be devoted to the Airspace Tribunal and its outcomes. The proposal for the new human right will be submitted to the UN and Council of Europe and other bodies early in the new year. The submission will include a legal commentary that sets out the argument for the proposed new human right, the double issue of *Journal of Digital War*, the drafting history and other key evidence that we have gathered. Once submitted it’s very important that the proposal is made widely available, via the journal’s publication, our international networks and online.
AD: We should also note here that once this volume is published and the proposal for the new human right is submitted, there is a lot of further work to be done alongside events planned for later this year and a number of shows too.

SI: The submission of the proposal for the new human right is in a way a beginning. The corpus of material that we have gathered, such as the transcripts of the hearings will be made available
to human rights lawyers to refer to in developing arguments, highlighting gaps in the legal framework and mobilizing new legal discussion. Building on all of this work to date, there is substantial research to be done, for example, into technology, aerial warfare, and the psychological impact of aerial threats, advocacy work towards adoption of the proposed right, and further evidence gathering working with a growing international network of partners. Art practice and future exhibitions and events that engage the public in different parts of the world are absolutely central to this work, as is my work with Nick Grief on the Airspace Tribunal, and my long-term collaborations with you, Andrew Hoskins and Renata Salecl and a growing network of international collaborators.

We recently held an Airspace Tribunal event for the Virtual Island Summit 2022, an annual online summit that brings together over 10,000 people representing over 500 islands globally, where we discussed interconnections between climate change, rising geopolitical tensions, nuclear threat and military expansion, and their impact on islands and island communities. We are also planning the first Airspace Rights People’s Assembly with les Abattoirs in Toulouse to coincide with my solo exhibition of Topologies of Air and a large body of artworks on the Airspace Tribunal there. A solo exhibition of Topologies of Air has just opened at Bahrain National Museum. A book launch for Topologies of Air will take place at the Imperial War Museum in London on 9 December.

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References


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