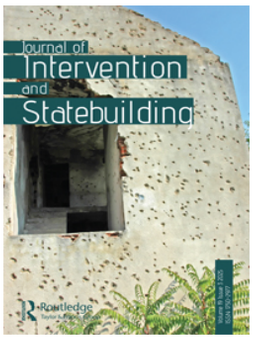

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Environmental Harms and Entangled Lifeworlds in the Russia-Ukraine War: A Relational Reframing of Transitional Justice

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ABSTRACT

This interdisciplinary article adopts a novel approach to thinking about the environmental impacts of the Russia-Ukraine war - and of war/armed conflict more broadly. First, it unpacks, drawing on original empirical data, how these impacts make salient the interconnectedness of human and more-than-human worlds, which it explores with reference to the concept of solastalgia. Second, the article situates its analysis of the war's environmental impacts directly in relation to transitional justice. Calling for a relational reframing of the field that gives expression to multiply entangled lifeworlds, it reflects on what this reframing might look like and emphasises two key ideas - care and listening.

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Care; listening; Russia-Ukraine war; solastalgia; soundscapes; transitional justice

> [W]e cannot understand what war looks like and feels like if we ignore the entanglements between humans and nonhumans. (Hromadžić 2022, 265)

Introduction

Nature has often been described as a 'silent victim' of war (see, e.g. United Nations Environment Programme [UNEP] 2022, 1). This does not mean, of course, that it makes no sound when it suffers. One can imagine, for example, the roaring sound of huge volumes of water rushing downstream when Russian forces destroyed the Kakhovka dam in Ukraine in June 2023 (Truth Hounds and Project Expedite Justice 2024), precipitating what the country's then Prosecutor General – Andriy Kostin – described as 'probably the biggest environmental disaster in the history of independent Ukraine' (Stop Ecocide International 2023). Yet nature has long been a 'silent victim' of war in the sense that its suffering and the harms done to it have too often been overlooked or marginalised. This neglect reflects the traditionally human-centred focus of International Relations (IR). As Cudworth and Hobden (2023, 399) point out, 'International Relations as a discipline remains highly anthropocentric (see also Fougner 2021; Youatt 2014).

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Against this contextual backdrop, it is significant that the environmental impacts of the ongoing Russia-Ukraine war have attracted considerable attention, as evidenced by a growing corpus of scholarship on the topic (see, e.g. Filho et al. 2024; Richardson 2023; Tsymbalyuk 2025; Węgrzyn et al. 2023). Such research is extremely important. Thirty-five per cent of Europe's biodiversity, for example – which equates to more than 70,000 species of animals, plants and fungi (UNEP 2022, 29) – is concentrated in Ukraine; and biodiversity hotspots like the Carpathian Biosphere Reserve and its virgin forest provide a home to critically endangered species, including the European mink (World Wildlife Fund [WWF] and Boston Consulting Group [BCG] 2022). More broadly, we are facing a triple planetary crisis of climate change, biodiversity loss and pollution, which, as a recent report by Norwegian People's Aid (NPA) and the Conflict and Environment Observatory (CEOBS) (2025, 4) underlines, makes it 'more vital than ever that we understand and address the environmental consequences of armed conflicts'.

This interdisciplinary article adopts a novel approach to thinking about the environmental impacts of the Russia-Ukraine war – and of war and armed conflict more broadly – and makes an important contribution to existing scholarship on the topic. Its approach has two key elements. First, the article – which builds on a recent 'relational turn' within IR (see, e.g. Cudworth and Hobden 2015; Kurki 2022; Leep 2023; Lipschutz 2024) – examines how the war's environmental consequences illustrate the late Deborah Bird Rose's (2011, 119) argument that 'there is no way out of entanglements with multispecies communities'. More specifically, it unpacks, drawing on original empirical data, some of the emotional responses of Ukrainian interviewees to the loss of their country's flora and fauna. It frames these emotional responses, in turn, as expressions of solastalgia – defined as 'the pain experienced when there is recognition that the place where one resides and that one loves is under immediate assault (physical desolation)' (Albrecht 2005, 45). Solastalgia is a concept that is unexplored in conflict contexts, and this research expressly seeks to demonstrate its usefulness in countering very compartmentalised analyses of war that contribute to maintaining human/nature binaries.

Second, the article situates its analysis of the Russia-Ukraine war's environmental impacts directly in relation to transitional justice. Rooted in liberal ideology, embedded in the 'existing (neo)liberal order' (Sesay 2022, 258) and concerned first and foremost with violations of individual human rights, the field of transitional justice is strongly anthropocentric (Clark 2023; Viaene, Doran and Liljeblad 2023). It has given little attention to the environmental dimensions of war and armed conflict, and it critically neglects the many 'worlds of life' (Van Dooren and Rose 2016, 80) with which our own lives are inextricably intertwined. There is, however, some important research that challenges this neglect (see, e.g. Bradley 2017; Celermajer and O'Brien 2021; Killean and Newton 2024); and this article brings something new to this corpus of scholarship. In using solastalgia as a lens for thinking relationally about the environmental impacts of war, it calls for an ontological and epistemological reframing – and pluralisation – of transitional justice that acknowledges multiply entangled life-worlds and takes them, rather than autonomous individuals, as its starting point. It also reflects on what this reframing might look like, highlighting in this regard the critical importance of extending (and reciprocating) care to more-than-human worlds and listening to them.

Methodology and article structure

The article is based on original data from a research project that is close to completion. More specifically, it draws on two sources of empirical data. The first source is 33 semi-structured interviews, 30 of which were conducted via Zoom and three via email. Due to the project's focus on the environmental impacts of the Russia-Ukraine war, the interview sample consisted mainly of scientists (all Ukrainian except one, who was Russian but living in Ukraine) – including botanists, ornithologists and herpetologists. However, I was also keen to explore the war's environmental dimensions from a variety of different perspectives, and for this reason the sample further included nine Ukrainians without environmental expertise; among them were an English teacher, a historian and a software engineer. Additionally, as one of the project's core aims was to demonstrate that the environmental consequences of war are hugely significant for how we think about and operationalise transitional justice, I interviewed two Ukrainian lawyers, one of whom was based in the Office of the Prosecutor General. I conducted five of the interviews with the aid of an interpreter and the rest in English. As some of the interviewees, however, were not used to communicating in English and lacked confidence, the interpreter was present in these cases to assist if necessary. After each interview, I checked and 'cleaned up' the Zoom transcript, coded it in NVivo – using mainly open/inductive coding – and made some post-interview notes.

The second source of data is acoustic, in the form of soundscape recordings. There exists a rich corpus of scholarship focused on soundscape ecology, broadly defined as all sounds – non-biological natural sounds (geophony), biological sounds (biophony) and human-made sounds (anthropophony) (Krause 2016, 2–3) – that emanate from a given landscape 'to create unique acoustical patterns across a variety of spatial and temporal scales' (Pijanowski et al. 2011, 204; see also Farina 2014; Gasc et al. 2017; Krause 2013, 2015). As a novel application of soundscape ecology – a concept overlooked in conflict contexts – I asked all research participants to make two short recordings, using their mobile phones, of their local soundscapes. The main idea was to explore some of the acoustic aspects of the Russia-Ukraine war and their effects on more-than-human worlds (see Clark 2025a). Interviewees uploaded their recordings onto a secure website hosted by the University of Birmingham and I asked them some questions about the recordings during the interviews (including 'How has your soundscape changed since the start of the full-scale invasion on 24 February 2022?'). I coded interviewees' responses to these questions in NVivo and I also made detailed pre-interview and post-interview notes. Some of the recordings are included in this article as endnotes. Full ethics approval for the research was granted by the Humanities and Social Sciences Ethics Committee at the University of Birmingham.

The article's first section outlines some of the environmental consequences of the Russia-Ukraine war. It draws on the interview data and particularly engages with the work of Ukrainian scholars, scientists and journalists, in acknowledgement of Tsymbalyuk's (2023, 248) argument that using a decolonial lens is important for addressing 'the marginalization of Ukrainian voices and knowledge about Ukraine'. The second section accentuates the relational dimensions of environmental destruction. It uses the interview data and soundscape recordings to explore and analyse some of the interviewees' emotional responses to the war's environmental impacts, discussing these

responses as expressions of solastalgia and, by extension, of deep connections between worlds. The third section foregrounds and discusses the significance of these connections for transitional justice, through a specific focus on the aforementioned concepts of care and listening.

The Russia-Ukraine war and more-than-human worlds

Interviewees who took part in this research frequently talked about the impact of the Russia-Ukraine war on animals. Prior to the full-scale invasion in February 2022, for example, one of the ornithologists interviewed had been closely observing a colony of cormorants in the Chornobyl Exclusion Zone (CEZ) in northern Ukraine. The CEZ was created following the Chornobyl nuclear disaster in 1986 and it is often described as a 'haven' for wildlife (see, e.g. UNEP 2020), although this does not tell the entire story (see, e.g. Turnbull 2020). The interviewee explained that: 'I observed the birds for many years along the waterbed of the Pripyat River, which runs through the Chornobyl Exclusion Zone. There were around 70 nests, and so it was quite a big colony' (interview, 31 January 2025). When he resumed his studies in 2023, however, the entire colony had gone. He maintained that the intense sounds of war and combat during the first weeks of the full-scale invasion, as Ukrainian and Russian forces fought for control of Chornobyl (Mohammed and Landay 2022), likely frightened the birds, causing them to leave and nest elsewhere.

An interviewee involved in monitoring birds in Tuzlivski Lymany National Park in Odesa region emphasised that some species, including flamingos, are particularly sensitive to noise disturbances; and he expressed concern about the effects of acoustic stress on migratory birds, such as avocets (interview, 30 June 2025). Certainly, there is significant research to be done on the war's acoustic impacts on birds (and other animals). One study has found that the conflict has had a 'noticeable impact' on Greater spotted eagle migratory behaviour (Russell et al. 2024; see, however, Hubareva and Viter 2024).

Another interviewee detailed some of the ways that the war has affected animals living in the Falz-Fein Askania-Nova Biosphere Reserve, Ukraine's oldest nature reserve (established in 1898). Askania-Nova has been under Russian occupation since the start of the full-scale invasion. The interviewee spoke about aircraft flying at low altitudes over the reserve, which causes panic and fear among the animals. Some of them have been injured or killed while trying to escape (see also Vasyliuk 2023); and cases of stress-induced miscarriage among Przewalski's horses – an endangered species of horse that was previously extinct in the wild – have been reported (Mankovska 2024). The interviewee particularly emphasised the impact of Russian mismanagement (largely due to incompetence and lack of relevant knowledge) of the reserve, which he described as 'a very finely tuned system' (interview, 22 November 2024). There have been issues, he noted, with proper supplies of food and medicine for the animals, and approximately 150 Saiga antelope were found dead in 2023. The probable cause of their death was an infectious disease (see also Mankovska 2024).

One of the biggest losses of animals – and one that can never be fully quantified – resulted from the destruction of the Kakhovka dam in June 2023, referred to in the article's introduction. Due to the massive breach of the dam and the rapid surge downstream of huge amounts of water from the Kakhovka reservoir, thousands of fish,

molluscs, insects and other species perished (Hryhorczuk et al. 2024). Some animals died after being flushed into the Black Sea. As a herpetologist explained, 'We are afraid that a considerable part of the population of amphibians from the lower course of the Dnipro River was killed because amphibians are not adapted to survive in the sea's salty waters' (interview, 4 March 2025). Additionally, the flooding of local areas destroyed breeding/nesting and feeding grounds (UNEP 2023); and many pollutants – including machine oil, industrial waste and landmines – were washed into the Dnipro River and Black Sea, affecting aquatic and marine ecosystems (Kvach et al. 2025; Vyshnevskyi et al. 2023). An advisor to Ukraine's Prosecutor General confirmed that the destruction of the Kakhovka dam and its myriad consequences are being investigated as a possible case of ecocide (interview, 16 December 2024). Currently, ecocide cannot be prosecuted in international criminal law – although there is growing momentum to add it to the Rome Statute of the International Criminal Court (see, e.g. Stop Ecocide International 2025). The crime is included, however, in Ukraine's Criminal Code (Article 441).

Interviewees also frequently spoke about the impact of the war on forests. One of the experts on this topic noted that physical damage to forests caused by shelling creates tree wounds, which can then become 'pathways for pathogen penetration, development of rot and mortality and colonisation by xylophagous insects [i.e. insects that feed on or in wood]' (interview, 8 July 2025). Ukraine's forests – which comprise 16 per cent of the country's total land area (WWF 2024) and include some rare natural old-growth forests – have also suffered extensive fire damage, a very visible illustration of the concept of 'injured landscapes' (Hromadžić 2022, 265). According to Cazzolla Gatti et al.'s (2025) research, for example, most of the regions affected by the war showed a high increase in forest loss in 2022 and 2023 compared to 2021;[1] and a recent Reuters report includes powerful images and aerial video clips of burnt forests within the Sviati Hory (Holy Mountains) National Park in eastern Ukraine (Peter and Hunder 2024). In Sviati Hory National Park and in Kreidova Flora, a steppe (grasslands) reserve also in eastern Ukraine, military actions and fires ignited by aerial bombardments and explosive weapons have caused significant damage and harm to extremely rare pine forests on chalk outcrops (Spinova, Kuchma and Vyshenska 2019, 45; Tsymbalyuk 2023, 254). These forests have been recognised (in 2018) by the Standing Committee of the Bern Convention[2] as an endangered habitat.

Fires, in turn, degrade air quality, releasing toxic pollutants into the atmosphere. Furthermore, new fire risks are accumulating, linked, in large part, to unexploded ordnance (UXO) – including landmines (Matsala et al. 2024). Risks from UXO, as well as factors such as the proximity of the frontline and the loss or confiscation of crucial equipment, also have a substantial impact on forest management – and on the speed and effectiveness of firefighting operations. For example, after Russian-backed separatists in eastern Ukraine declared the existence of the so-called Donetsk People's Republic and Luhansk People's Republic in 2014,[3] they seized and confiscated all firefighting equipment, subsequently redeploying it for military purposes against Ukrainian armed forces (Vasyliuk, Kolomitsev and Parkhomenko 2024).

The explosive munitions (including drones, missiles and artillery shells) that are a major cause of forest fires create heavy cratering and 'bombturbation' (Hupy and Schaetzl 2006) of soil surfaces. By disturbing and eroding the top layers of the soil, they affect the area's hydrology and vegetation (Certini, Scalenghe and Woods 2013, 2); and the breakdown of

explosive materials – including landmines – causes extensive soil contamination (Certini and Scalenghe 2024; Pereira et al. 2022; Solokha et al. 2023). Filho et al.'s (2024) research, for example, which involved the collection of 63 soil samples from four different combat zones (all of them protected areas) in October 2022, found that in all cases, there was 'a clear accumulation of metals in the upper humus horizon'.

The consequences of soil contamination from heavy metals can be extensive and long-lasting, affecting, inter alia, crucial microbiological and biochemical processes and building up in the food chain (Shebanina et al. 2024, 209). As one of the biologists highlighted, 'Pollution of different biotopes in areas of military activity will continue even after the war ends because a lot of chemicals from bombs and explosives will remain in the soil, in the water, in plants' (interview, 11 December 2024). Other war-related activities – including the movement of military vehicles and equipment, the loss or abandonment of tanks, the construction of earthworks and the occurrence of mass burials – also contribute to soil disturbance and damage (Solokha et al. 2023; Tsymbalyuk 2025). Additionally, soil pollution in the form of radioactive leaks from attacks on nuclear power plants in Chornobyl and Zaporizhzhia presents a serious ongoing risk (Aikman 2025).

The aim of this article, however, is not just to outline some of the many environmental impacts of the Russia-Ukraine war. It also seeks to demonstrate that these impacts have important relational dimensions. Damage to soils that are 'indispensable to terrestrial socioecologies' (Krzywoszynska and Marchesi 2020, 192), for example, necessarily affects myriad lives; contaminated soil runoffs pollute rivers, which are 'life-generating both for human and non-human ecologies' (Yaka 2019, 359); and the inhalation of smoke from forest and landscape fires highlights the concept of trans-corporeality (Alaimo 2008). As Verlie (2022, 297) argues vis-à-vis the devastating bushfires that occurred in Australia in 2019/2020, '[i]n breathing the smoke, we inhaled incinerated ecosystems, and the tiny particles of charred multispecies bodies made their way into our lungs, our blood, our organs, our brains'.

The article's accent on relationality, however, is not intended to detract, nor does it detract, from the scale of environmental harms occurring in the context of the Russia-Ukraine war (or indeed any war). Rather, it is a way of reflecting on these harms that draws attention to, and foregrounds, interconnected and entangled lifeworlds (Debaise and Stengers 2022; Escobar 2011; Haraway 2008; Probyn 2023). Ultimately, and by extension, it is a novel way of challenging – as the final section demonstrates – the anthropocentricity of transitional justice that leaves intact the false 'analytical separation between nature and humanity' (Krzywoszynska and Marchesi 2020, 194).

Thinking about environmental harms through a relational lens

War is a deeply relational phenomenon and one that illustrates the posthumanist idea of the human 'as necessarily enmeshed in a multiplicity of relations with human and nonhuman others' (Radomska 2016, 16). Scholars have explored this enmeshment through a focus, inter alia, on assemblages of human and other-than-human actors in war (Fish and Richardson 2022), interspecies belongingness (Leep 2018), entangled security threats (Mitchell 2014) and 'afterlives' that highlight how war 'persistently propitiates new social forms and relations, even long after the bullet and the shrapnel have fallen

to the ground' (Ruiz-Serna 2023a, 546). Some scholarship on the Russia-Ukraine war also encapsulates a variety of relational themes.

Tsymbalyuk, for example, articulates how she used her drawings of plants in the Kreidova Flora nature reserve, currently under Russian occupation, to tell stories about them – and how Ukrainians (in London, Scotland and Tbilisi) responded by sharing with her their own stories and memories about these plants. Her work thereby elicits some of the connections between Ukrainians and these more-than-human worlds. She also encouraged everyone to draw a plant, emphasising that stories with/about plants through drawings 'guided us on an imaginary trip to the lands now occupied by Russia and allowed us to see and visualize some of the inhabitants for whom *Kreidova Flora* has been a home under threat' (Tsymbalyuk 2023, 258). Further illustrating such connections, Zaiets highlights the fact that when the city of Kharkiv – located just 30 kilometres from the Russian border – was facing a barrage of rocket attacks in May 2022, tulips and violets were being planted in its main flower beds. Flowers, he underlines, 'need daily care: they are watered, weeds are removed, the soil is loosened – and all this against the background of empty streets and shelling from barrel and rocket artillery' (Zaiets 2024, 184; see also Murza 2024, 147).

Expanding on the theme of care, various studies have discussed people looking after and protecting animals during the war. Kulyk and Prylutska focus on the work of staff at the Zgraya Shelter in Zaporizhzhia, a city close to Ukraine's southern front line. Stressing the unwavering dedication of staff at the shelter – which was established in 2014 to provide assistance to animals – they maintain that '[t]he full-scale war has revealed the power of love, thirst for life and consideration for others' (Kulyk and Prylutska 2023, 7). Kuzmenko and Koshlanskaya (2022) have written a deeply moving article about Kuzmenko's experiences of single-handedly caring for reptiles in the Reptiles Breeding Centre – located in Kharkiv region – for a period of 80 days amid constant attacks from Russian forces. Smith and Kuzyo's (2024) work, to take a further example, analyses videos posted on social media to examine some of the ways that Ukrainian soldiers on the front line have extended care to frightened and hungry animals (see also AFP News Agency 2022; Radio Free Europe/Radio Liberty 2023).

This section makes its own important contribution to these relational tropes, specifically by exploring some of the emotions that interviewees shared and expressed – linked to the aforementioned concept of solastalgia (Albrecht 2005; Albrecht et al. 2007) – when discussing the war's environmental impacts. It could be argued that to thus emphasise interviewees' emotions – including grief and sadness – is simply reverting to a human-centred approach. Yet the article attaches significance to these emotions precisely as psychoterratic states reflecting our *connectedness* with more-than-human worlds.[4] To cite Gillespie (2016, 584), '[w]e grieve what we know and what we care about and what we feel as a loss'.

It is well established that sound can evoke emotions (see, e.g. Algargoosh et al. 2022; Huron 2015). In the context of this research, some interviewees particularly expressed emotion when speaking about and reflecting on their soundscape recordings. As an example of how such recordings can richly communicate what Krause (2013, 4) has called 'the acoustic texture' of a particular environment, a zoologist shared a recording that he made in a steppe area of Luhansk region in 2013, a year prior to the commencement of war in eastern Ukraine. The entire recording – which is a little over one minute

long – captures the repeated call of a steppe marmot[5] and some faint bird sounds in the background. Discussing the recording's personal significance to him, and describing the area in which it was made as his 'favourite place on Earth', the interviewee revealed:

> I am afraid that I will never be able to hear steppe marmots again and that I heard them for the last time in 2013.[6] In 2014, this territory was occupied, and it is occupied now. And I decided to share the recording because it is probably the last memory of a place that I want to go back to. These are the sounds that I'm dreaming of listening to in the wild. (interview, 20 September 2024)

One of the botanists uploaded a recording that he made a few hours before the interview, while walking through a park in Kyiv on his way to work.[7] There is the sound of wind and of birds calling; the rooks are particularly prominent. When asked about the recording and how he felt when he listened back to it, he explained:

> It reminds me of the winter landscape in Askania-Nova when winter starts and we have the very first snow on the trees and the sounds of rooks, the sounds of birds. I really started to think about my days in Askania. Here in Kyiv, we can still hear natural sounds, but they cannot be compared to the sounds of nature that we have in the biosphere reserve, in the steppe zone of Ukraine. By the way, today we have the first snowfall in Kyiv and it has really evoked some nostalgic feelings in me. (interview, 22 November 2024)

This sense of nostalgia has important geographic dimensions, linked to the interviewee's physical distance from Askania-Nova. It is a nostalgia that results from 'the gap between where we are and where we once were and/or where we want to be' (Bonnett 2015, 2). As previously noted, however, Askania-Nova has been under Russian occupation since the start of the full-scale invasion in 2022 and has been affected by the war in many ways, which the interviewee spoke about at length. Taking account of this larger context, the above passage of text also thus contains elements of solastalgia – 'longing, melancholy and anguish for a lost place' (Askland and Bunn 2018, 18), the future of which is currently very uncertain.

The relationship between the environmental impacts of the war, sound and emotion also emerged in other more indirect ways. One interviewee recorded silence at midnight,[8] describing this as a 'luxury' in Kyiv. The previous night, she explained, there had been multiple air raid alarms[9] (a sound that several interviewees recorded)[10] and drone attacks, making it impossible to sleep. Her recording is an interesting acoustic illustration of how war can make prominent – and audible – 'the value of silence', which often 'goes unheard' (Eng 2002, 92). More memorable than the recording itself, however, was the interviewee's description of her first visit to the site of the former Kakhovka dam after it was destroyed – and the sense of silence that she evoked. She recalled:

> I was in this place after the catastrophe. There were dead fish everywhere and you can't help because there is just death. There are dead molluscs. Thousands, thousands, and you walk and you can hear the sound when you're walking on their shells. And they died. There are thousands of other creatures that also died. (interview, 27 September 2024)

As she spoke, I imagined her walking through this deathscape, the silence broken by the sound of her footwear sliding and crunching on the hard mollusc shells. I continue to do so whenever I think about this particular interview and its relevance to two questions that Stein (2007, 61) poses: '*What do memories sound like? What do feelings sound like?*'

(emphasis in the original). The interviewee moved on to talk about some of the work that she is doing in the aforementioned Sviati Hory National Park in Donetsk region in eastern Ukraine. Noting that the forests there are now heavily mined and littered with explosive materials (Shevchenko, Horbatenko and Aljas 2024), meaning that few people go there, she commented that the sounds of explosions in the forest do not go unheard. Animals hear them – and die from them. As I wondered how her work might have affected her emotionally, she reflected: 'We have a lot of material, but when you actually see what is happening yourself, it's different. There are feelings and emotions. And it's hard'. Although she did not elaborate, I could see those feelings and emotions on her face as I looked at her through the screen of my laptop. Later in the interview, while underscoring that 'justice' cannot exclude nature, she revealed: 'It's very painful to see how nature dies or to see these fires, to see these animals. I have seen animals die because of mines, explosions. I have seen them in pieces'.

While this interviewee showed me many images through her words, an ornithologist did so more literally. Holding her phone up to the screen and sharing with me some online images of rare bird species in Ukraine, including the Great bustard (*Otis tarda*) and the Saker falcon (*Falco cherrug*), she emphasised that the habitats of these birds were under threat even before Russia's full-scale invasion, due to anthropogenic pressures on steppe and forest-steppe zones. She also expressed her fears and worries – which can be viewed as an example of what Stanley (2023) has termed 'anticipatory solastalgia' – about how the war might be affecting these birds. Discussing Great bustards, the global population of which has declined in the last two decades (Alonso and Palacín 2022), she noted that:

> They were breeding in Askania-Nova and who knows what is happening there now. There were also Great bustards in Crimea, and again there is the question of what is happening there now with these birds. We have no influence. We cannot even know if they are still there. (interview, 25 October 2024)

The interviewee stressed that '[n]ature, of course, has a right to be without our emotions'. Yet she also wanted to convey that it was deeply painful to know that she might never again be able to visit some of the places where she has so many happy memories of observing birds and learning about them. She additionally spoke about the emotional impact of the destruction of Ukrainian forests, referring specifically to the Serebryansky pine forest in Luhansk region in eastern Ukraine. The war has transformed this once lush and verdant forest – which has been the scene of fierce battles between Ukrainian soldiers and Russian aggressors – into a burnscape of bare and blackened trees, some of them reduced to small stumps protruding from the scorched forest floor (see, e.g. Sabbagh and Kochetova 2024). The interviewee reflected that '[i]t was an important nature reserve and now it's completely destroyed by artillery. It's very depressing and it hurts. Seeing photos of this destruction hurts'.

Another interviewee made a soundscape recording of herself walking with her husband in a forested area of a park in Kyiv. There is the sound of their footsteps[11] and then, very faintly, the sound of music playing. The interviewee made the recording on 1 October (2024), the Day of Ukrainian Defenders. The music was the Ukrainian National Anthem, and it abruptly jolted her back to reality; 'there is a war here and nobody knows what will happen in a month, in a day' (interview, 3 October 2024). It was while thinking

about the recording and listening back to it that she started to make sense of her conflicting feelings that day; she was happy to be with her husband, but she also experienced a strong sense of guilt and shame. She was relaxing and enjoying herself, while Ukrainian soldiers were dying on the front line.

This interviewee also spoke with emotion about a forest near her childhood home. She used to pick mushrooms in this forest with her mother; and up until the start of the full-scale invasion, she had continued to enjoy spending time there and foraging. Tsing (2012, 142) highlights that '[y]ou visit the spot enough, and you know its seasonal flowers and its animal disturbances; you have made a familiar *place* in the landscape' (emphasis in the original). Familiar places, in turn, 'are the beginning of appreciation for multi-species interactions' (Tsing 2012, 142). The interviewee described a particular period when she spent a lot of time in this forest as 'one of the happiest in my life'; and she talked about wanting to help other people, through her journalistic and social media work, to understand 'how beautiful the forest is, how valuable it is and why we need to save it' (she is actively involved in anti-logging campaigns). Since 2022, however, she has no longer been able to visit this forest, which is now heavily mined. Emphasising the threat that landmines pose to biodiversity and large animals (CEOBS 2024; Vasyliuk 2024), she also stressed her sadness that 'Russian soldiers have stolen a part of my life that was entangled with the forest' (interview, 3 October 2024).

In focusing not only on some of the environmental impacts of the Russia-Ukraine war, but, also, on some of the emotions that these impacts have evoked, explicitly or implicitly, what this section has sought to demonstrate and make salient is the power of 'connections in a shattered landscape' (Zaiets 2024, 181). These connections, moreover, are highly relevant to the field of transitional justice, offering an ontological starting point for developing expanded approaches that include rather than marginalise more-than-human worlds and 'refuse the boundaries that cordon nature from culture' (Tsing 2012, 141).

Environmental harms, relationality and transitional justice

Thinking beyond liberal individualism

The field of transitional justice has given little attention to environmental harms resulting from war and armed conflict – and little attention to more-than-human worlds more broadly. There is a small but important and growing corpus of transitional justice scholarship that seeks to address these gaps (see, e.g. Ariza-Buitrago and Gómez-Betancur 2023; Clark 2025b; Killean and Dempster 2025). It should also be noted that activism by Indigenous and Afro-Colombian communities has catalysed some significant judicial developments in the context of Colombia's Special Jurisdiction for Peace (see, e.g. Killean and Newton 2025; Ruiz-Serna 2023b). Overall, however, 'transitional justice mechanisms have rarely engaged with the harms inflicted on Nature' (Killean and Newton 2025; see also Viaene, Doran and Liljeblad 2023, 2); and given the field's origins and historical development, this is largely unsurprising.

There is a fundamental link between transitional justice and democratisation (see, e.g. Barahona De Brito, Enriquez and Aguilar 2001) and the field has its roots in Western liberal ideology. As such, it privileges a particular way of looking at and understanding the world, marginalising non-Western and Indigenous onto-epistemologies (Zanotti 2025) that

accentuate relationality and 'kinship entanglements' (Todd 2017, 107). Transitional justice scholarship, moreover, has engaged little with important bodies of literature – including posthumanism (Braidotti 2013), new materialism (Barad 2003), multispecies justice (Tschakert 2022) and more-than-human geography (Whatmore 2006) – that strongly echo Indigenous thinking (Todd 2016, 8) by foregrounding connections between worlds. This neglect only contributes to preserving notions of human exceptionalism and 'the anthropocentricity that permits societies to externalise the costs of unsustainable lifeways to other species' (Strang 2023, 477).

Existing discussions about transitional justice and environmental harms often take place within the larger context of calls to decolonise the field (see, e.g. Izquierdo and Viaene 2018). As a consequence, they often focus on countries in the Global South, and in particular Colombia. In linking environmental harms and transitional justice through a specific focus on Ukraine, this article offers something new. Additionally, its conceptual and empirical reflections on solastalgia are a novel way of highlighting and thinking about 'the *relationality* of human and non-human life' (Yaka 2019, 355; emphasis in the original). This final section is specifically concerned with how to practically translate this relationality into transitional justice. Due to the limits of space, what follows is not a comprehensive discussion, but, rather, some exploratory ideas centred on the interrelated concepts of care and listening.

Caring for and listening to more-than-human worlds in transitional justice

If environmental destruction reflects a lack of care towards more-than-human worlds (Dowd 2022, 1290), rooted in the persistence of human/nature binaries, the relational themes that this article emphasises – by exploring the concept of solastalgia and the emotional dimensions of war-related environmental harms – make salient the significance of care. Relationships involve acts of care, and a question that is integral to a relational reframing of transitional justice, ontologically and especially epistemologically, is: 'What does caring mean when we go about thinking and living interdependently with beings other than human, in "more than human" worlds?' (Puig de la Bellacasa 2017, 13).

As part of the answer to this question, it is essential to acknowledge the myriad ways that more-than-human worlds care for us. Puig de la Bellacasa (2015, 692) discusses in this context the importance of soil, 'a living, interdependent community' that provides a host of services fundamental to our wellbeing (see also Puig de la Bellacasa 2017, 192). Kimmerer, in her book *Braiding Sweetgrass*, also offers many examples. To take just one, beautifully evocative in its imagery, she notes that: 'My students are always different after root gathering. There is something tender in them, and open, as if they are emerging from the embrace of arms they did not know were there' (Kimmerer 2013, 225). There are further, more implicit, illustrations within the interview data. One interviewee, for instance, spoke about her depression and how her two dogs (one of them a former stray that she rescued in 2022) help her. In her words, '[t]hey are keeping me more alive than I would be without them. I am lucky to have these fluffy bodies' (interview, 23 October 2024). Another interviewee stressed that her interactions with other lifeworlds – she specifically spoke in this regard about immersing herself 'in a kaleidoscope of different sounds, different vibrations' – are a psychological source of strength and energy (interview, 13 November 2024).

Examples such as these raise the further critical question of how transitional justice can reciprocate acts of care. A first and obvious step is to ensure that the harms done to more-than-human worlds in situations of war and armed conflict are not overlooked or marginalised. Reparations are clearly important in this regard (e.g. Almassi 2021; Killean 2021). It is also useful, however, to think about reparations in relation to Haraway's (2008, 36) argument that '[c]aring means becoming subject to the unsettling obligation of curiosity, which requires knowing more at the end of the day than at the beginning'. Curiosity thus defined arguably plays quite a limited role in many reparations processes. They are harm-centred, focused on calculating and monetarising harms, and they do not necessarily translate into 'knowing more at the end of the day than at the beginning' (Haraway 2008, 36). This is especially the case if, ultimately, more-than-human worlds do not actually benefit from them. Expressing his concerns on this point, one of the interviewees underlined that '[w]hen we talk about reparations, one of the biggest issues is how they will be used. And I have no doubt that the money will not be spent on the environment' (interview, 24 October 2024).

Significantly, the relational reframing of transitional justice that this article advocates – which also meshes with a wider decolonising imperative (see, e.g. Watts 2013, 23) – does not only entail acknowledging and addressing harms done to more-than-human worlds. It also requires acknowledging and giving expression to their agency. As Iovino and Oppermann (2014, 3) underscore, '[i]t is quite arduous for humans to declare their agentic independence in a hybrid, vibrant, and living world' (see also Barad 2003; Bennett 2010). An important illustration of the agency of more-than-human worlds is their potential to regenerate and recover from harms. When speaking about the devastation wrought by the destruction of the Kakhovka dam, for example, interviewees also frequently highlighted that there is some encouraging evidence of species and habitats replenishing (Kvach et al. 2025). They particularly noted in this context that there is now a willow forest growing on the site of the former Kakhovka reservoir (Dzyba and Kyriienko 2024). According to one of the interviewees involved in monitoring the site, '[n]ow we have a young willow forest, and probably this is the biggest floodplain forest in all of Europe. If we allow this forest to restore, it will be an amazing habitat, and it will provide a lot of ecosystem services like carbon sequestration' (interview, 4 September 2024).

Existing discussions about ecological reparations and transitional justice largely neglect this regenerative aspect of more-than-human worlds. Yet one way of demonstrating care, as Haraway conceptualises it, and of showing genuine curiosity is to explore how reparations can support and work with ecosystem dynamics and processes. As one of the botanists reflected: '[l]ife will always find its way, and we should carefully help it, but not think that we are smarter than nature'. He was not saying, he stressed, that we should simply leave things alone, 'but we should not think that we can do everything' (interview, 22 November 2024). Arguments such as these neither take away from the value of monetary reparations nor minimise the harms that more-than-human worlds suffer in conflict contexts. They do, however, support the case for a thicker conceptualisation of reparations that can contribute to fostering new knowledge about more-than-human worlds.

Another important way of showing (and reciprocating) care is through listening. Celermajer et al. (2021, 128) remark that 'once we suspend assumptions about what counts as communication, it becomes glaringly obvious that the ecological realm offers very loud statements: extinctions, fires, droughts, fish die-offs, ocean heatwaves, and

more'. In addition to these 'very loud statements', nature also communicates in more subtle ways, including through 'breathlessness' (Neimanis 2019, 503), reactions to anthropogenic sounds (Krause 2016, 30) and audible shifts and changes in the content, texture and frequency of a soundscape (Galloway 2020, 84). Listening to more-than-human worlds is a different way of interacting with them that can foster deeper insights into, and understandings of the impacts of war. It also gives expression to and acknowledges what LaBelle (2021, 77) terms 'acoustic relationality', which is a dimension of the interconnectedness of different lifeworlds. As the Potawatomi writer and botanist Kimmerer (2013, 333) reminds us, we are 'students of nature, not the masters' – and '[t]he very best scientists are humble enough to listen'.

On one hand, listening to more-than-human worlds and knowing how to interpret geophonic and biophonic sounds requires specialised knowledge. This highlights the importance of making space within the field of transitional justice for a wider range of expertise, including, inter alia, zoologists and experts on bioacoustics. On the other hand, listening does not require specific skills or knowledge – several interviewees remarked on the value of citizen science and the usefulness of apps such as iNaturalist – and is a crucial part of what Haraway (2008, 19) calls 'the play of companion species learning to pay attention'. Asking interviewees to make recordings of their local soundscapes was one way of encouraging this attentiveness – and of thinking acoustically about some of the environmental impacts of the Russia-Ukraine war (Clark 2025a). Furthermore, many of the soundscape recordings, in various ways, evidence what Gallagher, Kanngieser and Prior (2016, 618) term 'expanded listening', defined as 'the varied ways in which bodies of all kinds – human and more-than-human – respond to sound'. In one of the recordings, for example, the interviewee is gently talking to her dog and trying to comfort her.[12] In another recording, a dog howls loudly,[13] disturbed by the sound of an air raid siren. Reflecting on the recording, the interviewee who made it commented:

> When I re-listened to my first recording, I noticed just for a couple of moments the sounds of birds singing in the background – tits and sparrows. These are sounds of birds that are typical for my city, but I do not pay attention to them in my routine life. When I re-listened to my soundscape recording, I noticed them. (interview, 11 December 2024)

The key point is that expanded listening, and giving attention to the multiple impacts of sound, is an act of care that can potentiate new interactions in the context of transitional justice – and new perspectives that extend beyond viewing more-than-human worlds only as victims. As Tsymbalyuk (2023, 247) emphasises, for example, 'All stories about war and displacement are profoundly multispecies'; and the role of more-than-human worlds in these stories is not a passive one. They are storytellers in their own right (Gagliano 2018; Kimmerer 2016; Wooltorton, Poelina and Collard 2022), and listening to them – and with them – is a crucial way of forging what Van Dooren and Rose (2016, 85) have called 'active sites for the ongoing weaving or braiding of stories, efforts to inhabit multiply storied worlds in a spirit of openness and accountability to otherness'.

There are many possibilities for incorporating expanded listening into transitional justice processes, formally and informally. Prosecutors seeking to demonstrate evidence of environmental war crimes and ecocide, for example, could include soundscape recordings into their arguments, thereby offering acoustic insights into ecological processes and

changes. Soundscape recordings could also be used to create interactive memorials and museum exhibits. One of the outputs of this research, for example, is a unique online soundscape exhibition,[14] and this will be preserved in the British Library as an acoustic archive of the war that supports memory building. As Geismar (2005, 4) notes, '[h]earing sound forces the listener to use their imagination and memory in a more creative way'. Additionally, sound has a role to play in reparations processes. It is a potential source of information about both harms and wider ecosystem dynamics – and hence it is highly relevant, linking back to an earlier point, to thinking in expanded ways about reparations and what they might entail. Several interviewees noted, for example, that the current ban on hunting in Ukraine (in accordance with martial law) has benefitted some species, including deer; and one of the ornithologists made a recording – which she titled 'A forest full of life' – that captures the barking sound of roe deer[15] in a hornbeam forest in central Ukraine.

Of course, it could be argued that the act of listening is still performed by humans who choose whether or not to listen – and what they want to listen to. Yet this misses the fundamental relationality of agency, which, as Barad (2003, 818) accentuates, 'is not an attribute but the ongoing reconfigurings of the world'. Listening, therefore, can never be just about human agencies. Rather, it involves and reflects multiple intersecting agencies that shape what we listen to, how we listen and what we ultimately hear.

Conclusion

In discussing some of the environmental consequences of the Russia-Ukraine war, this article has brought something new to existing literature on the topic. Drawing on original empirical data in the form of semi-structured interviews and powerful soundscape recordings, it has emphasised some of the relational dimensions of environmental destruction; and it has specifically invoked the concept of solastalgia – neglected in conflict contexts – to examine how such destruction affects people emotionally. Its use of the concept, to reiterate, is not about privileging human perspectives and making environmental harms secondary. Rather, it is about accentuating and foregrounding in a novel way the entanglement of different lifeworlds; and ultimately the article has explored how to translate this entanglement – or what Escobar (2020, 7) calls 'the inexhaustible *tejido* (weave) of interdependence that sustains life and allows it to flourish' – into a relational reframing of transitional justice.

In unpacking what this reframing might look like, the article has underlined the concepts of care and listening, and it has reflected on how to practically apply them in ways that acknowledge and give expression to other-than-human agencies. Care and listening also form part of the research methodology. The decision to include sound was aimed not only at addressing an important gap in existing scholarship on the environmental impacts of war, but, also, at stimulating curiosity about (and attentiveness to) more-than-human worlds – both in the context of the Russia-Ukraine war and more broadly. That the soundscape recordings – an example of biotic art (Prum 2013) – are now publicly available, moreover, directly encourages listening as an act of care.

The late Deborah Bird Rose (2011, 119) reminded us that 'relational ethics for living and dying in the Anthropocene urge us to assume ever greater mutuality and accountability for intra-dependent members of the suffering family of life on Earth'. These words have

taken on added urgency in the context of the Russia-Ukraine war, and it is incumbent upon transitional justice scholars and practitioners to take them seriously. This does not just mean prosecuting and seeking to repair harms done to more-than-human worlds. It also means, more fundamentally, reimaging ourselves 'as one living part among many other-than-humans' (Fenske and Norkunas 2017, 109); and, by extension, it means being open to creatively exploring ways of doing transitional justice not only *for* but also *with* more-than-human worlds.

Notes

1. These regions included Kyiv and Kherson, which suffered calculated two-year losses of 268.37 and 214.14 km^2 respectively (Cazzolla Gatti et al. 2025).
2. The Bern Convention is the Convention on the Conservation of European Wildlife and Protected Areas. This binding international legal instrument entered into force in 1982.
3. These actions, together with Russia's illegal annexation of Crimea, marked the start of the Russia-Ukraine war in 2014.
4. Significant in this regard are some of the discussions about solastalgia vis-à-vis the impact of climate change on Indigenous communities. Writing from an Aboriginal (Gamilaraay) perspective, for example, Upward, Usher and Saunders (2023, 1492) emphasise that words such as solastalgia 'are present in other forms in our yarns – sadness, loss, grief, loss, destruction, trauma, loss, What Country used to be … and what it is becoming'. In their own work, exploring how respected older women ('Aunties') on Erub Island in the Torres Strait are experiencing climate and other environmental changes, McNamara and Westoby (2011, 233) highlight that '[d]istress caused by environmental change can be devastating for communities which have a strong connection to country, and whose cosmologies are imbedded in place and the natural environment'.
5. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/8/
6. According to Rusin (2023), potential threats to marmots in Luhansk region include 'building fortifications in marmot colonies, intensive artillery barrages, and mining'.
7. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/45/
8. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/11/
9. An air raid alarm briefly sounded during this particular interview.
10. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/58/
11. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/13/
12. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/5/
13. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/48/
14. See https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/
15. https://rethinking-transitional-justice.bham.ac.uk/sounds/exhibition/sounds/83/

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