Editorial
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Introduction: Nuclear Ghosts, A Special Issue

Apocalypse can take time, even a lot of time, it is not necessarily an instantaneous event, but can last and last…long enough for another world and history to take place before 'it all ends'.
Alenka Zupančič

The derealization of the 'Other' means that it is neither alive nor dead, but interminably spectral.
Judith Butler

Who gave them this power?
Who anointed them with the power to burn?
Kathy Jetñil-Kijiner

When the Russian War on Ukraine began to consume media outlets around the world in the early stages of the invasion in February 2022, many of the discussions quickly turned to the prospect of nuclear catastrophe. Since then the Russian president Vladimir Putin has repeatedly highlighted Russia's nuclear capacities and willingness to deploy such force, strategically stationing tactical nuclear weapons in Belarus or deploying the heavy symbolism of occupying the Chornobyl reactor for weeks on end. Routinely, news coverage would link these threats to a discourse of end-world scenarios, headlining the unfolding adversities as impending "nuclear apocalypse," (Jackson 2023) "Putin's apocalypse," (Neef 2022) or, yet more forthcoming, "apocalypse now" (Meadors 2023; Owen 2023). In January 2023, the Bulletin of the Atomic Scientists moved the hands of the Dooms Day clock—a device introduced in 1947 to represent the scientists' estimation of possible global catastrophe—forward to 90 seconds to midnight, implying an unprecedented proximity to apoca-

lyptic destruction. The "apocalyptic tone," so aptly invoked by Jacques Derrida in 1984, it seems, has firmly attached itself to a discussion about contemporary nuclear threat, most notably in the US and Western Europe.

What is remarkable about these developments is not so much a resurgence of nuclear danger or the dooms-day framing of news headlines, but how the assumptions that underwrite this ostensibly fresh embrace of radioactive apocalypse signal a temporal, emotional, and geographical fissure in the perception of nuclearity. On the one hand, the fear of nuclear catastrophe is saturated with future anticipation or the frequent invocation of a looming 'end of the world'. On the other hand, nuclear threat and violence are commonly treated as Cold War relics, 'newly' emerging in the chaos of the present but nevertheless always already relegated to the past. In both cases the unending present of nuclear violence is carefully ignored—predominantly in terms of the ongoing repercussions and enduring perpetuations of nuclear testing as well as the ever-emerging entanglements, in Karen Barad's sense, between nuclear violence and the assaults of colonialism, racial capitalism, militarism, sexism, climate injustice and so on, particularly in those places that do not tend to monopolize the news: the Marshall Islands, French Polynesia, the lands of Australian Aborigines, Newe Sogobia, Hawaii, and many more. Eclipsing those fears, desires, affects, and fantasies that capture what Gabriele Schwab calls the "ontological, psychological, and epistemological break inaugurated by the atomic age" (2020, xiii), this voided present/presence (or a present/presence that is avoided) suggests a turn to apocalypse that points to a range of possible catastrophic 'endings' and is simultaneously evading, if not disarming, the possibility of far-reaching change or insight, precisely because, from the perspective of well-worn privileges, many people still get to believe that despite the presence of the atomic bomb, the world has in fact not ended (yet).

To a degree, denial of this kind is necessary in order to cope with and maintain a world that has been rendered fragile beyond repair with the very initiation of the nuclear war machine. "Who can bear to lose the world," asks Lauren Berlant (2011, 27) and "what happens when the loss of what's not working is more unbearable than the having of it and vice versa?" Paradoxically nuclear destruction has emerged as a way of apocalyptic world-making, by which the foundational violence of imperial political power—division, hierarchization, and objectification—is intensified, escalated, and unevenly distributed. Indigenous communities and their lands face the highest level of vulnerability to ongoing nuclear testing. More than 900 nuclear tests have been conducted on Shoshone territory in the US alone. At the same time, the nine nuclear military powers—the

United States, Russia, the United Kingdom, France, China, India, Pakistan, the Democratic People's Republic of Korea (North Korea) and Israel—continue to expand and develop their nuclear arsenals. In January 2023, the Stockholm International Peace Research Institute (SIPRI) estimated a total global inventory of 12512 nuclear warheads, around 2000 of which, nearly all of them controlled by the US and Russia, are kept in a state of "high operational alert." At the same time, many people "go on living as if the nuclear danger were not there" (Schwab 2020, 5), clinging on to a helpless and in many ways 'cruel' optimism, putting faith into technological futurism or ignoring the many ends of the world that have happened and continue to happen altogether. If this sense of 'holding on regardless' is a privilege, who or what is being evacuated by this refusal to confront the ends of worlds? Who or what is vanished in the dodging? And, at the same time, how might we make sense of the absurd accumulation and expansion of a nuclear weapons arsenal that has rendered everyone on the planet a target, an object, a ghost?

This special issue of *Apocalyptica* takes on the friction between nuclear imaginaries and nuclear politics, proposing a different kind of conversation while also gearing towards something amiss in familiar fantasies about the end of the world or ends of worlds in the context of nuclear threat. Bringing together exceptional scholars, artists, and journalists engaged in the work of nuclear criticism, the issue challenges what Lisa Yoneyama has called "nuclear universalism" (1999, 15), which both obscures the ongoing violence of the nuclear industrial complex and simultaneously enables its flourishing. It is also an opportunity to confront the systematic silencing of (anti) nuclear debates and practices of survivance, theorizing the unfinished business of nuclear disaster and positing a meaningful politics of re-membering which, in Barad's sense, "is not about going back to what was but rather about…the attempt to do justice, to account for the devastation wrought as well as to produce openings [and] new possible histories," (2018, 63) thereby marking both an act of returning to and piecing together the world. Looking at the nuclear in its various political and intimate intersections with other ongoing structures of violence and oppression, this special issue is interested in a kind of undoing of the erasure wrought by hegemonic narratives about nuclear exceptionalism, historical repression, and apocalyptic futures in an effort to achieve a conversation about nuclear threat by which "the present begins to imagine itself otherwise," in Jessica Hurley's words (2020, 30), attending to the various entwinements between nuclear violence and the metaphysics of militarism, racism, colonialism, and intimate experience as a way to rethink scales of apocalypse and to reconsider the cultural, material, and ethical

implications of radioactivity as everyday familiarity, as structure of feeling, and as political injustice.

Ghosts have a presence of their own.

Tellingly, Barad (2018, 78) approaches the void through the lens of Derrida's hauntology as "a spectral realm" where "not even nothing can be free of ghosts." The political work of avoidance is hence always also a matter or mattering of the ghost or the ghostly; a 'ghostly matter' as Avery Gordon (1997) would say. To Gordon (2013, 107) "haunting describes how that which appears to be not there is often a seething presence, acting on and often meddling with taken-for-granted realities." Being haunted, in this sense, draws us into a temporal, emotional, and spatial rift (the kind I mentioned above) effecting a critical rejoinder to the presence/present that has been a/voided. Specifically it lends itself to contemplating the endurance of nuclear violence as something that is not actually located in 'the future' of all out nuclear war or banished to the past of World War II history and the succeeding years of the Cold War arms race but has been waging in the form of nuclear testing since the very first blast (see Kato 1993, Hashimoto 2003, Barad 2018).

The ghost begins by coming back.

The first atomic detonation was conducted on 16 July 1945 in the Jornada del Muerto desert, near Alamogordo in New Mexico — in an area which was home to several Native American villages, including two Apache tribes and chapters of the Navajo Nation. Initiating the nuclear age, the Trinity Test under the auspices of the Manhattan Project introduced the world to what Robert Oppenheimer, now often referred to as 'the father of the atomic bomb', described at the time as "the radiance of a thousand suns," a remark to which he later added the now infamous line "[n]ow I am become death, the destroyer of worlds" after the bombing of Hiroshima and Nagasaki a few weeks later in August 1945. Arguably, this apocalyptic tenor, which Derrida (1984b) would later link to a terrifying unconscious desire for all out annihilation that drives the militarization of the world, actually described a world-ending moment (and not necessarily a *potentially* world-ending moment) precisely because it revealed a different structure of existence, an ontological disorientation, or a new world — or so the fantasy goes — yet at the same time instantaneously repeated, escalated, and dragged into the present the long-standing history of settler colonial violence, the erasure of indigenous presences/presents, and

the unending ghosting of what Rob Nixon (2011, 150) has referred to as "unimagined communities."

Rather than producing existential change, it turns out, the 'end' staged in the New Mexican desert has largely served as a form of ideological consolidation, routinely insisting on the bomb as a tacit cataclysmic event that somehow always remains virtual so as to pave a way into futurity despite its capacity for all-out annihilation. From the outset there were bizarre claims that the bomb would ensure peace and save lives, even the world, providing a 'master signifier' for the nuclear imaginary, which to this day largely relies on the sublime tactic of comforting horror with megalomanic awe. In this way, the world-destroying menace of nuclear power was re-read as a world-building prospect, or as Derrida put it in his seminal essay "No Apocalypse, Not Now," the anticipation of complete destruction "installs humanity—and through all sorts of relays even defines the essence of modern humanity—in its rhetorical condition" (1984b, 24). However, procuring a philosophical suspicion that the nuclear age is that which brings the world into being, precisely through the possibility of ending it all, this sense of world-making actually puts into crisis the fantasy of a metaphysical objectivity of the 'world' and its possible endings. In denying the humanity and presence of those living through the repercussions of the blast, the bomb (also) displaces the end of the world by always already (a)voiding 'the end' of specific worlds and firmly locating the catastrophe in some ominous disastrous future fallout on the basis of which national and global aspirations can be accelerated and realized while continuing a colonial structure of violence. Ostensibly avoiding and hence 'ghosting' history, this dialectic of world-breaking and world-making produces a synthetic orientation towards the future but more pressingly renders the past undead.

What kind of worlds and endings become imaginable through the lens of the nuclear?

The fantasy of a cataclysmic future event/end misreads the apocalyptic extent of the nuclear project from the outset. Calling the apocalypse disappointing, because it can never actually live up to its anticipation, Alenka Zupančič (2017) explains that the fantasmatic motion of locating the end of the world simply in either the past or the future is precisely undone by the material initiation of the bomb. Drawing our attention instead to duration, Zupančič (2017, 24) explains "that we are not facing an approaching apocalypse, but are already standing within it." To her it is clear that "the

wrong button has already been pressed" and that "apocalypse has already started and is becoming an active part of our life and our world, such as it is" (2017, 24). Similarly, Oxana Timofeeva (2014) explains that "as far as it unveils (i. e., unveils what is), etymologically the apocalypse is always now," it discloses a certain reality. To her "it will not get worse; it's already worse" (2014) precisely because the apocalypse, in Zupančič's sense, is "not waiting for us somewhere in the future, but is dictating our social, economic, environmental conditions as we speak" (2017, 24). The explosion of the Trinity Test alongside the bombing of Hiroshima and Nagasaki in 1945, in other words, describes an apocalyptic moment of extreme loss (of the world/s), creating an ostensibly postapocalyptic, ghostly existence, as Katherine Guinness explains in this issue, or an end of time, "a vanishing presence … coming from the future as well as from the past" (Barad 2010, 257) .

The nuclear post-apocalypse, in other words, must be grasped as a form of accumulative, slow violence and enduring coloniality that divides, occupies, and ultimately structures entire worlds, specific communities, and ordinary subjectivities. To Joseph Masco (2021) the nuclear age is thus still emerging; it remains "highly contested," (11) repeating the fantasy of an "extremely short, fast and totalizing end of everything" (40) as the motor of establishing the very constitution or mattering (in the material and metaphoric sense) of the world. As such it achieves a nuclear infrastructure that affords the naturalization of atomic weapons and throws contemporary life into a form of ongoing crisis. In this sense, the nuclear age is more acutely described as sustaining (and being sustained by) what Jessica Hurley (2020, 9) calls "the nuclear mundane," which turns our attention away from the sublime event of fantasized omnipotence to "the environmental, infrastructural, bodily and social impacts of nuclear technologies and the politics that prioritize them." Consumed with a complex array of violent structures — colonial dispossession, antiblackness, xenophobia, and overlapping means of resource extraction — these "infrastructures of apocalypse" (Hurley 2020) intersect the ordinary, the intimate, and the psycho-political of everyday experiences with the forces of traumatic histories as they are conjured up and habitually repeated by unending nuclear injuries, suggesting that dying of radiation is always already caught up in power formations and always already taking place: gradually, slowly, ghosted.

What this issue highlights, then, is the way nuclear violence normalizes the post-apocalypse into a "crisis ordinary" (Berlant 2011, 9) which is both instantaneous and measured, tracking modes of death and survival from different vectors of privilege. In this scenario, apocalypse traces the

formation of specific lives and subjectivities (Schwab 2020) and it crucially points to a present that is a modality of intersecting forces and histories which circulate and form the ordinary as a zone of toxic convergences. Similar to the way in which Berlant conceptualizes crisis as unexceptional to history and consciousness—as a "process embedded in the ordinary that unfolds in stories about navigating what's overwhelming"—apocalypse, if viewed through the nuclear, then points to a world that might, as Danowski and Viveiros de Castro propose in their book *The Ends of the World*, "also fade away little by little" (2016, 25). It is this kind of apocalypse that demands a shot at uncovering that which has been made obstruse because it makes tenable the prospect of total and irrevocable destruction, not as a threat in the future but as a constitutive element in the making of the present, or what Barad (2018, 73) calls "the very worlding of the world."

Ghosts repeat. Ghosts incite.

The present/presence of ghosts is that by which the repressive work of the nuclear project ceases to be effective. Ghosts force a confrontation or a point of meeting that enables the apparition of abusive structures of violence which otherwise draw their force and invincibility precisely from being misread as over and done with. Ghosts, by contrast, mediate a specific way of seeing that which is spectral (and not necessarily spectacular) in its very application of power and injury. Through the eyes of the ghost, the nuclear project, in other words, is cautiously exposed in the full weight of its apocalyptic endurance. If nuclear ghosts point to those continuous endings that are slow moving and long in the making, too vast and simultaneously too close to comprehend through the exceptional, and instead trace a silent devastation and ongoingness of the everyday, then such ghosts rupture and limit the nuclear imaginary, precisely by asserting the patient violence of nuclear damage and grief. Hovering at the intersection between the political and the psychological, between the ecological and the technological, the empirical and the intuitive, the present and the absent, then and now, such ghosts relentlessly insist on their presence/present, or state of existence in the thick of the now, despite an ostensibly apocalyptic future and because of the world-ending past.

What kind of worlds and endings are rendered unimaginable, inconsequential, or ghosted by the bomb?

The contributions in this special issue are concerned with the formations of nuclear imaginaries, exploring the distribution of spectrality and injury through specific orientations, locations, and experiences while being attentive to the material reconfigurations and various coexistences of intersecting histories—and of past, present, and future more broadly. They are concerned with a unique sense of anxiety, or a structure of simultaneity, of "simultaneous others," as Maria del Pilar Blanco (2012, 7) would say. They think about the emergence of haunted landscapes and troubled subjectivities and they grapple with the allocation of agency, the identification of political intention, the acknowledgement of historical complexity, and claims of ethical accountability. In short, the authors brought together in this issue approach the nuclear through a particular idea of haunting, which prompts an opportunity to think through repressed forms of violence, in Avery Gordon's sense, in order to "bring 'something to be done' in the present" (1997, xvi) and to find "a route," or "access to that which is marginalized, trivialized, denied, disqualified, taxed and aggrieved" (1997, xviii). How do ghosts name the conditions of ontological insecurity and epistemological limits? Under what conditions do ghosts invite (collective) actions or meaningful narratives about life and death? And, what does the nuclear imaginary tell us about the past, present, and future endings of the ghostly world/worlds? Attending to ghosts as a different (*or perhaps other*) mode of sensemaking, the special issue meaningfully expands what Gordon calls "the right to theorize" (xviii) and thereby not only intimates the political weight of haunting in the context of nuclear injustice but also broadens the apocalypse as a method of knowledge—a field for thought beyond its theological tradition and a generative means of contemporary cultural politics and insightful analysis.

Just like the ghost, apocalypse reveals.

Seen in this light, the contributions in this issue not only rearticulate the terms of nuclear discourse but also reconsider the making and breaking of a variety of worlds and thereby tell us something profound about the limits and possibilities of apocalypse. As Elaine Gan, Anna Tsing, Heather Swanson and Nils Bubandt point out in *Arts of Living on a Damaged Planet*, "considered through ghosts, worlds have ended many times before" (2017, G6). Two things about haunting, then, are particularly instructive here. Firstly, Gordon insists that haunting is not simply a metaphor or a supernatural abstract, but a social phenomenon, a politics and a form of knowledge production. And secondly, for Barad (2017, G107) "hauntings are not immaterial. They are an ineliminable feature of existing material condi-

tions." Nuclear violence seeps into the earth, the air, the body (as does its erasure) and thereby reconfigures, to use Barad's expression once more, the ongoing "worlding of the world" (2018, 73). Similarly, apocalypse may be considered a method, a framework and a politics with material consequences, "an imaginative practice," as Jessica Hurley and Dan Sinykin (2018, 451) put it, "that forms and deforms history for specific purposes: an aesthetic, [narrative, or genre] that *does* as much as it represents," routinely altering the experience of temporality and space and thus not only consolidating but also rupturing the inevitability of historical injury.

Ghosts touch everything.

If haunting is not immaterial, neither is the ghost. When we come together to discuss nuclear ghosts and apocalypse then, we are interested in the impacts of nuclear violence on concrete landscapes and bodies. We are interested in how haunting shifts our understandings of temporality, how it animates repressed or unresolved forms of social violence and how it reveals opportunities for overdue justice. We look to haunting as a means to read one history through another, thereby stitching up the wounds invoked by administered forms of forgetting and political denial that ultimately sanction the repetition of political violence, and thus need to be disrupted. We also engage haunting as something that animates the material implications of social imaginations and concrete politics alike, disrupting the nuclear apparatus as a means of apocalyptic apprehension and historical repetition, or what Anne McClintock calls the "imperial déjà vu." Nuclear hauntings become tangible in the intimate frictions of lived experience and everyday life but they speak to larger structures of violence: to climate emergency, global injustice, and settler colonial endurance.

Ghosts leave traces. Erasures are material.

According to McClintock, the United States military raised a shack in the nuclear debris after the bombing of Hiroshima, and "screened a Wild West film for American soldiers" (2014, 826). McClintock reads this scene as the production of an imperial déjà vu, whereby Hiroshima had become a perverse new nuclear frontier (a projection which also extended into the Pacific) but also revealing, in true apocalyptic fashion, that colonial violence and nuclear assault had never in fact been separate forces. Such forms of ghosting, in McClintock's eyes produce "a kind of counter-evidence" in the form of material and spectral traces that summon the "shadowy after-effects" of empire (2014, 821). Nuclear haunting is thus in Eve

Tuck's and C. Ree's words also "the relentless remembering and reminding that will not be appeased by settler society's assurances of innocence and reconciliation" (2013, 642) precisely because "decolonization," as they further assert "must mean attending to ghosts, and arresting widespread denial to the violence done to them" (2013, 647). Decolonization, Tuck and Ree write, "is a recognition that a ghost is alive, so to speak. We are in relation to it and it has designs on us, such that we must reckon with it graciously, attempting to offer it a hospitable memory, out of concern for justice" (647). This includes acknowledging that those who are ghosted are often not ghosts at all, but ordinary people with ordinary lives and that nuclear ghosts conjure up a critical moment that ultimately points to lived politics as well as tangible ways of organizing and resisting.

In the end.

The ghosts we seek in this issue articulate the entanglements between atomic violence and the ongoing assaults of colonialism, sexism, capitalism, war, and environmental destruction, cathecting the apocalyptic ontologies of past, present, and future, but they also point to the intimate, to the ordinary, and the local. Hiroshima and Nagasaki, Chornobyl, and Fukushima all mark defining moments in nuclear history that have occupied collective narratives in countless ways. These instances of spectacular (and spectral) extinction have produced unsettling points of reference for extraordinary scenes of destruction. At the same time, the creeping repercussions and complex contexts of these events as well as the slow violence of nuclear testing contradict notions of exceptional or enclosed disasters, precisely because the nuclear forces itself upon a lived reality, defying linear notions of time and injury. Nuclear ghosts trouble dominant notions of temporality, spatiality, and materiality. They amend hierarchies of world-ending experiences, from the intimate to the social, from the spectacular to the ordinary, from the hegemonic to the unimaginable, and so on. They pay witness to political atrocities, while acknowledging a specific nuclear work of death as something that is simultaneously blasting and slow, fast and near, abstract and material. Nuclear ghosts, in other words, invoke the spectral domain of apocalyptic imaginaries in their various political scales, interdependencies, and ongoing urgencies.

Writing present/presence otherwise.

The special issue moves from an interrogation of the material violence of nuclearity through the lens of time, re-membering, and haunting to

specific discussions of nuclear colonialities and nuclear intimacies, before turning to examples of artistic and journalistic 'storying' of the troubling present/presence of nuclear ghosts. While this is an attempt to put these various approaches and perspectives in conversation, it will also become clear that many of the accounts have been and are, in Barad's sense, always already in touch, always already *entangled*. It is a privilege to be able to bring these entanglements to the forefront by assembling writers and artists who share a commitment to ongoing interrogation of the nuclear, particularly in its impact on concrete, material lives. I want to take the opportunity to thank them here for sharing their insightful and considerate analyses in this form.

The issue opens with Karen Barad's incisive and thought-provoking keynote lecture "Nuclear Hauntings & Memory Fields, For the Time-Being(s)," which they generously shared as part of the Nuclear Ghosts Workshop at the Käte Hamburger Centre for Apocalyptic and Post-Apocalyptic Studies in July 2023. Barad offers an agential realist reading of quantum field physics which outlines the violent application of science in the form of the nuclear bomb, particularly in its complex interrelations with militarism, colonialism, imperialism, capitalism, racism, etc., and simultaneously demonstrates that the same science is haunted (in the material sense) by the opportunity to trouble the onto-epistemological conditions it produces. Barad traces haunting as a deconstructive force that troubles time and reads time-beings as "a dynamism of differentiating entangling." Haunting, in Barad's work, is hence an activity of the world, a form of ongoing worlding, or "spacetimemattering" with vast consequences for our perception of memory, nuclearity, and apocalypse. Engaging the ghostliness of nuclear time-beings and thereby recognizing the continuous, slow, material, colonial violence exercised by the bomb, Barad works from a diffractive reading of quantum physics, Kyoko Hayashi's novella *From Trinity to Trinity*, and the poetics of Jake Skeet, in order to unfold the material entanglements between practices of knowing and ways of being that may achieve an understanding of nuclear lives and deaths that is geared towards justice and response-ability.

Gabriele Schwab's contribution elaborates on the complex issue of "Nuclear Temporalities." Schwab argues that the knowledge of the all-encompassing destructive power of nuclear weapons inaugurated a fundamental break "in the temporal order of things," producing a distinct form of haunting which simultaneously hails from the past and stretches into the future. To Schwab, the potential of total annihilation encoded in the very existence of nuclearity has subsequently left a profound mark on human subjectivity, which is tangible as a form of transgenerational

trauma, but fundamentally alters human temporality, profoundly impacting species survival and planetary scales, as well as rupturing psychic and political life. Schwab identifies the creation of "apocalyptic selves," which are profoundly haunted by the possibility of extinction and therefore require a kind of collective numbing in order to live on. This splitting of the self, to Schwab, results in a form of psychological 'death in life' and thereby points to the enduring dynamics of nuclear necropolitics. Debating the nuances of futurelessness, she asks how we can make sense of this fundamental shift inaugurated by the nuclear age.

Lisa Yoneyama's article "Co-Conjuring: Practicing Decolonial Nuclear Criticism" explores the possibilities of creating relational sensibilities across entangled nuclear catastrophes in order to challenge the colonial logic of division and partitioning. Looking at a range of cultural productions, most notably Peter Blow's documentary film *Village of Widows* (1999) and Marie Clement's acclaimed play *Burning Visions* (2002), Yoneyama traces cultural practices of haunting or what she calls forms of "radiontology." Conceptualizing a dynamic of co-conjuring that allows for "critically relational ways of knowing the nuclear" without reproducing the problematics of a facile nuclear universalism, whereby distinct forms of experience are falsely read as equivalent, assimilated, instrumentalized and thereby ultimately erased, Yoneyama is interested in co-conjuring as a way of connecting while maintaining the specificities of sovereignty, land rights, survivance, etc. Yoneyama's analysis points to the simultaneity and mutual entanglement of multilayered forms of violence, invoking a polyvalent, multi-varied, and intersectional practice of relational justice across times and spaces. Reordering the workings of nuclear power, from Canada to Japan, from nuclear disaster to settler colonialism, and finally to environmental emergency, Yoneyama's contribution appreciates radical interconnectedness as a form of decolonial nuclear criticism.

In her article "The Pikinni Ghost: Nuclear Hauntings and Spectral Decolonization in the Pacific" Jessica Hurley continues to theorize the means of nuclear de/colonization "as a mode of living with ghosts." Drawing on the US-led 1957 return of the Roñļap community to Roñļap on the one hand and Kathy Jetñil-Kijiner's 2018 video poem *Anointed* on the other, Hurley's contribution highlights different conceptions of the 'Bikini ghost', intimating how these apparitions sit within a continuum of colonial violence. While the obsessive repatriation of the Roñļap community is read as a Western attempt to exorcise ghosts and settle "all claims, past, present, and future" once and for all, Jetñil-Kijiner's poem serves as an example of relational mourning, whereby the nuclear ghost is incorporated within Marshallese structures of kinship and care, opposing the logic

of nuclear settler colonialism. Hurley argues that in treating 'The Tomb' on Runit Island as a relative that requires ongoing care, Jetñil-Kijiner disrupts colonial temporalities that seek to bury the past and instead develops a form of decolonial sovereignty that accomplishes "a form of anti-nuclear worldmaking" through ongoing practices of Marshallese survivance.

Annelise Roberts' discussion of nuclear imperialism moves the focus to Australia, unpacking the implications of British nuclear testing in the 1950s and 60s. Roberts' contribution "Atomic Totem: Australian Settler Nuclearism, the Disavowal of Aboriginality and Morbid Reconciliation" reads the British practice of naming nuclear testing sites and operations with the help of Indigenous languages, symbolism, and imagery — routinely mis/using such words and representations — as a way to imbue the nuclear complex with a "vague sense of Aboriginality." Roberts situates this tendency within the context of what she identifies as a complex process of disavowal within the Australian settler imaginary, whereby the relationship between colonizer and colonized is simultaneously denied and brought to the forefront in an attempt to navigate an ongoing and unbearable intimacy. Roberts argues that the practice of indigenizing nuclear power points to unacknowledged contradictions that stem from settler colonial violence and thereby marks an attempt to 'totemize' the bomb as a way of binding settler state and Indigenous in a morbid kin-like relationship, which is only principally capable of imagining a common future through the possibility of shared annihilation, or what Roberts calls "a kinship of apocalypse."

Roxanne Panchasi's contribution "'You don't screw with the Sahara': Radioactive Dust and the Return of the French Imperial Repressed" takes up the eerie phenomenon of tons of "lightly radioactive" Saharan sand appearing in France in 2021 and 2022, which created a visually striking, golden dust raining down on the French landscape and turned it into a post-apocalyptic setting from which to examine the imperial past, particularly in its link to French nuclear testing in the 1960s in the Sahara desert. Invoking the troubled colonial history between France and Algiers, Panchasi explains that the appearance of the dust served as a catalyst for debates about French imperial legacies in the context of the COVID-19 pandemic and ongoing threats of climate change. Largely read as a "post-colonial boomerang," the phantom dust thereby tapped into a specific historical moment in which the configurations of toxicity and imperial debris were already performing a metaphoric purpose in giving meaning to the unresolved histories between France and Algiers in the context of these new crises. In engaging this uncanny specter, Panchasi asks what concrete actions the revelatory capacity of this apocalyptic sand might serve.

Shifting the lens to the intimate of slow nuclear violence, Marisa Karyl Franz examines the haunting of ordinary affects in the still-life of nuclear disaster. Franz's contribution "Ordinary Haunting in Irradiated Land" looks at three art projects invoking the legacies of Chornobyl and Fukushima through "the mundane material of everyday life." The article draws attention to the durational intimacy of nuclear disaster, turning to everyday life as the focal point for a spectral presence. Franz unpacks the ordinary as saturated with meaning and affect and thereby highlights the ways in which disasters disrupt but also produce specific forms of normalcy that require a particular ethical relationality and avoid the repetition of nuclear violence in the very act of its representation. Discussing the intricacies of nuclear intimacies in relation to Michael Marder and Anaïs Tondeur's *Chernobyl Herbarium* (one of the project's photographs is also serving as the cover image of this issue), Eva and Franco Mattes' *Fukushima Textures* and Ai Weiwei's *A Ray of Hope*, Franz traces the myriad ways in which the art of ordinary still-life produces a specific channel for mourning the loss of familiarity, routine, and home with recourse to the materiality of the everyday.

Staying with the experience and materiality of nuclear contamination, K.M. Ferebee looks at the polysemic meaning of "Chornobyl," particularly in the context of the Russian invasion of Ukraine in 2022. Ferebee's article "'A New Chernobyl': Narratives of Nuclear contamination in Russia's 2022–3 Ukraine War" examines how media narratives surrounding the invasion conceptualize "Chornobyl" as a site of Ukranian national identity that points to an incorporation of the toxic (rather than its refusal). Ferebee argues that the way Chornobyl's toxicity is embraced in the Ukrainian national imaginary runs counter to established "toxic discourse," insofar as the mobilization of the nuclear as a treasured wound and potential ally (against Russian aggression) resists notions of the Exclusion Zone that either rely on fantasies of prenuclear purity or deadly apocalyptic destruction. Instead Ferebee explains that the area might also point to an ongoing intimacy with danger, suggesting a world that has never been 'whole' to begin with. Beyond the signifying power of "Chornobyl," Ferebee is interested in lived experience and material sites that do not position the apocalypse as a future threat but encounter it as an ongoing reality, tied to unexpected processes of sense making.

In her contribution "Mediation and Autobiographical Ghosts," Katherine Guinness takes up the personalized responses of journalists to a widely circulated video by the New York City Emergency Management which gives advice on how to prepare for a nuclear attack. Discussing these intimate details in their relation to ongoing nuclear disaster, Guin-

ness explores the autobiographical as a way into understanding how the nuclear mediates the present as a spectral apparition. Arguing that everyone today is rendered a ghost, stuck in the enduring afterlife of nuclear realization, Guinness traces a contradiction between the unimaginable and impersonal that commands a desire for relatability and intimacy. The ghosts in Guinness' argument are haunted by their own lack of agency, the inaccessibility of the past, and the loss of future, or what she develops as 'negative hauntology'. In this scenario "nuclear apocalypse has happened and is yet to come," which creates a kind of refusal of the present that Guinness seeks to challenge. Resisting the individuality of the ghost, Guinness pleads for "a renewed collective responsibility to the present," in which we learn to live with ghosts and thereby ultimately learn to live with ourselves in the wake of the nuclear.

In addition to these academic writings, the special issue also highlights the voices of artists and journalists. Melanie Le Touze and Zackie Schneyder's ongoing project on the Brennillis plant in Monts d'Arrée in Finistère, France—the 'end of the world' in Breton—traces nuclear ghosts through a combination of photographs, interviews, and philosophical reflections. Le Touze and Schneyders collect the stories that emerge in this haunted environment, approaching the impact of nuclear technology with respect to the legends and myths of the region. Using lomography, a photographic technique geared towards the experimental and unpredictable, admitting flaws, blurs, unusual lighting and unexpected perspectives, the project makes visible the ghostly quality of this endeavor but also emphasizes the political implications of nuclear experience. Presenting excerpts from this work in progress, here titled "The Brennillis Plant, A Nuclear Ghost at the Gates of Hell," Schneyders and Le Touze illuminate the ongoing fantasies, lived structures, and ambivalent imaginaries surrounding the decommissioned power plant.

Taking the issue full circle, back to the beginning of the end, Elva K. Österreich's contribution "Experiencing the Trinity Test in New Mexico" presents excerpts from her 2020 book *The Manhattan Project: Witnessing the Bomb in New Mexico* in which she recounts the initiation of the first blast through the eyes of those closest by. A journalist in Southern New Mexico for more than two decades, Österreich has spent years collecting the stories and accounts of eyewitnesses, scientists, and journalists who were present at the detonation of the first bomb. In this selection, she gives detailed insights into what happened on the day, recounting various perspectives and testimonies. At the same time, Österreich's storytelling also draws attention to both, the intimacy of the experience and the flexibilities of memory that go along with this. Gesturing to various ongoing

attempts to receive acknowledgement and compensation for the loss and enduring repercussions that many have experienced, Österreich's account not only provides a lens into various mnemonic snapshots of the Trinity Test but also works as a reminder that such memories are contested, malleable, and ultimately political.

Finally, Theresa Meerwarth closes the issue with a review of Gabriele Schwab's 2020 book *Radioactive Ghosts*, discussing its various implications for thinking the nuclear in terms of temporality, psychology, politics, and apocalypse, thereby revisiting many of the topics (and ghosts) summoned throughout this issue.

A final word of warning: Ghosts. are. frightening. They cannot be appeased. Nor should they be.

While haunting subsumes an apocalyptic world, it is not strictly concerned with ending things—neither does it necessarily aim at reconciliation, conclusion, or hope. Rather haunting is geared towards ongoing commitment, perseverance, and the refusal to stop. As Tuck and Ree put it, "for ghosts the haunting is the resolving, it is not what needs to be resolved." Similarly, Derrida reminds us that the ghost is somewhat ambiguous and incalculable: "[o]ne cannot control its coming and going" (Derrida 2006, 11). Ultimately then the ghost's prerogative is not inevitably to be understood. In fact, the attempt to fully disavow the ghost's opaqueness suggests a certain kind of troubling repetition—a form of familiar mastery and a well-worn kind of occupation, both of which are at the very heart of the erasure, denial, and conquest subsuming the power structures that have brought about the nuclear bomb. The aim of attending to ghosts hence cannot be to lay those ghosts to rest, so to speak, in fact such a wish or goal, too, bespeaks a certain kind of violence reproduced in the form of purging, closure, or catharsis. Just as nuclear violence escapes this kind of "ending," the ghost produces a strange present/presence that undercuts attempts at control. Rather than aiming to disclose—in true apocalyptic fashion—'the truth' about nuclearity, this issue hence attends to ghosts in order to sit with them, to live with them, to learn with them, and in some sense to *unend* them. In this way, the contributions in this issue create a particular orientation towards the enduring apocalypses—towards ongoing trouble, tenacity, and transformation. This kind of engagement is difficult, ambivalent, and necessarily incomplete, but it abides to the ghosted precisely because as Avery Gordon (1997, 208) concludes her *Ghostly Matters*, and I this introduction at last:

"*the ending which is not an ending at all belongs to everyone*."

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