Building Common Ground

Ecological Art Practices and Human-Nonhuman Knowledges

edited by
Emiliano Guaraldo

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Building Common Ground

The Future Contemporary
Inquiries into Visual, Performing,
and Media Arts

Series edited by
Cristina Baldacci
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Susanne Franco

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THE NEW INSTITUTE
Centre for Environmental Humanities (NICHE)
at Ca' Foscari
University of Venice

VENETIARUM UNIVERSITAS IN DOMO FOSCARI
Università Ca'Foscari Venezia
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Abstract

This volume examines the entanglements between contemporary art practices, ecology, and non-human subjects through contributions from scholars, art writers, critics, artist-researchers and designers. The collected essays reveal contemporary art's potential to reorient epistemological and ontological coordinates amid ecological and existential crises, questioning human exceptionalism and the exploitative logics of extractivism and planetary industrialisation. Central to the volume are issues of environmental degradation and violence, racial capitalism, colonial legacies, the emergence of the Anthropocene, in relation to the diverse terrain of contemporary art practices. Emphasising the agency of more-than-human collaborators, from animals to microbial ecologies, and from oceans to nuclear waste, these practices expose injustices, reclaim damaged ecosystems, and propose alternative ways of being in and with the planet. Artist-researchers contribute perspectives that open up new avenues for knowledge creation in the disrupted landscapes of the Anthropocene, pointing to symbiotic relationships between humans and non-human entities that are only beginning to be explored. By sharing theoretical frameworks and languages, the artists' and writers' contributions make clear that the environmental crises impacting the ecosystems require new collaborations to build common epistemological grounds, and shared visions of planetary futures.

Keywords Art and ecology, Anthropocene. Contemporary art. Multispecies justice. Ecological art practices. Non-human subjects.

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SECTION 4. RACIAL ECOLOGIES AND EXTRACTIVE VIOLENCE

Preface

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This edited volume was conceived to foster the building of common ground between artist-researchers and scholars operating at the juncture of visual, performing and media arts, and the environmental humanities. As art research methods have become increasingly crucial in envisioning and (pre)interpreting the massive planetary changes that are defining contemporaneity – by consequently creating awareness and a sense of care for every form of life and of interspecies relationship – it is of utmost importance to bridge the gap between academic and artistic research. Sharing problems, methodologies and tools constitute the basic premise for the work done by the social and environmental humanities, together with the arts and the natural sciences, and for preparing a much needed epistemological shift; that is, bringing human and non-human knowledge closer together.

This shift, as cultural anthropologist Veronica Strang brilliantly points out, is first of all one in "positionality", since it "recognises that non-human beings and ecosystems are not humankind's passive subjects but the co-creators of shared lifeworlds". "A logical consequence – Strang stresses – "is a greater appreciation of the rights and interests of non-human beings and ecosystems, both in law and in the decision-making processes that shape human-environmental relations". Therefore, she calls for the need "of some form of pan-species democracy that simultaneously respects biocultural diversity" (2023, 1).

In their writings, both Veronica Strang and another distinguished cultural anthropologist, Elizabeth Povinelli, have argued how indigenous people greatly contribute to the debate about the urgent need to start considering and establishing the rights and personhood of nature, namely of non-human beings (Strang 2020; Povinelli 2016). The reference to these two authors is far from being accidental, not only for their important contribution in the field, but also because their thoughts and researches are among the beacons of the activities carried out at THE NEW INSTITUTE Centre for Environmental Humanities (NICHE), within which this volume situates itself.

As a research centre devoted to the environmental humanities, NICHE promotes interdisciplinary studies and public engagement activities, from the unique perspective of Venice, but opening the debate to a global scale. At the core, NICHE places water and aquatic landscapes, with the identification of new methodologies necessary to have a greater perception and awareness of water at a social, cultural, political level, which questions current decision-making processes.

The alliance between the humanities, the sciences and the arts is crucial to NICHE, this is why, among its current ten research clusters, one is dedicated to Ecological Art Practices. This cluster interrogates the relationship between art and the environment combining ecocritical approaches, radical imagination and creative sustainability. It seeks both to create inclusive opportunities for transdisciplinary dialogue and to encourage international collaborations with (arts) institutions, research centres and commons on the importance of rethinking the 'ecology of culture' in relation to the environmental change.

As the essays in this volume also confirm, by collecting different voices and perspectives, art can help us – as dwellers – to think with and listen to the Earth, facilitating respectful co-existence and co-creation processes. The artist duo formed by Beate Geissler and Oliver Sann, who engaged in an intriguing conversation with the book editor, Emiliano Guaraldo (a fellow at NICHE and a member of the Ecological Art Practices research cluster), have consciously expressed the role and value of art, especially in relation to the ecological crisis. "It's not simply about generating artworks" – they argue. It's "an all-encompassing ecosystem of creative thought and expression. Most artists, unlike many other producers of knowledge, can afford failure more readily and are therefore not paralysed by fiasco. As a result, art is not afraid of failure" (see p. 155). If art is not afraid, we – first of all as researchers and scholars – should not be afraid either and we should try to bridge the gap between what we know and what we do not know with the help of others, whoever 'the other' may be.

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Introduction

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Amid contested debates over the proposed Anthropocene epoch, artistic practices have emerged as vital mediums for exploration, response, and denunciation. In this terrain where knowledge produced by the humanities, social sciences, and geosciences converge, the arts stimulate questioning of humanity's centrality within planetary ecosystems. Going beyond merely reflecting conditions, these practices actively reshape shared epistemological and ontological coordinates in an era of existential crisis, provide means to denounce injustices wrought by environmental degradation, and disrupt boundaries, opening spaces to cultivate emergent more-than-human epistemes.

The impacts of industrial activity on the Earth systems have reached an unprecedented intensity, driven in large part by the unconstrained dominance of extractive ways of perceiving the world around us. Over the past decade, critical debates have arisen over how to accurately characterise this profoundly human-altered geological epoch. Since the early 2000s, the proposed Anthropocene paradigm has offered a way to reframe the global impact of industrial activities by seeking the imprinting of human forces into Earth's very geophysical strata. However, as widely contended now, at least within the humanities, this perspective has contributed to homogenising complex, uneven actions by obscuring Western-led modernity's central role fueled by exploitative social and economic regimes (Malm, Hornborg 2014; Todd 2015).

The planetary changes affecting our times manifest across microscopic and macroscopic scales, and through diverse phenomena from the pervasive diffusion of toxic pollutants to mass extinctions and climatic disasters. Their complex entanglements with both human and nonhuman forms of life reveal intricate networks of environmental degradation alongside potential avenues for regenerative futures. Moreover, the varied impacts of these transformations unfold across multiple timescales, stretching from a speculated deep future, where industrial traces will fossilise to permanently

occupy Earth's record, to the immediate present, where daily confrontation with myriad forms of environmental violence occur for humans and nonhumans alike, with disproportionate effects on vulnerable communities inhabiting global capital's sacrifice zones (de Souza 2021; Farrier 2019; Fox 1999; Klein 2015).

Alternative paradigms have emerged to make sense of such mutating planetary reality. Concepts such as the Capitalocene (Moore, Altvater, and Crist 2016), the Plantationocene (Davis et al. 2019; Haraway 2015; Mitman 2019; Murphy, Schroering 2020), and the Wasteocene (Armiero 2021) provide critical frameworks to examine the complex, multiscalar dimensions of these transformations. They highlight the inextricable links between environmental degradation and the exploitative practices of racial capitalism. Meanwhile, fields like ecocriticism, econarratology, and ecomedia studies have provided tools and methods to analyse literary and artistic representations of the ecological crisis and the narrative potentialities of matter, landscapes, and the non-human worlds (Iovino, Oppermann 2014; Cohen, Duckert 2015; James, Morel 2020; Seger 2022; López et al. 2023; Baldacci et al. 2022); while theories of toxicity and chemical contamination attempt to chart the biological ramifications of pollution across bodies and ecosystems (Murphy 2008; Davies 2018; Seger 2022). Together these diverse modes of analysis help us understand how human activities impact the environment in perceptible and imperceptible ways, and how, in exchange, these transformations leave marks in the creative output of the arts.

Moreover, it has become of crucial importance to acknowledge the growing inclusion of nonhuman subjects within the artistic production of contemporaneity, echoing also a recent tendency towards the political and legal subjectification of natural entities (Stilt 2021; Tola 2018). This development prompts a re-examination of anthropocentric foundations underpinning knowledge systems and neoliberal governance, as nonhuman beings increasingly enter into creative and analytical frames, not as passive objects, but as agential co-participants constituting meaning and the worlds we share. Microbial ecologies, technological networks, post-industrial landscapes, water and geobodies, rocks and animals all express ways of knowing and being (see, e.g., Luisetti 2023). The acknowledgement of their ways of being and their worldmaking potential can help us extend the realm of subjectivity beyond the human.

Art harbours the capacity to create spaces that enable the subversion and reconfiguration of dominant systems, yet it also risks being co-opted as a vehicle for greenwashing and perpetuating existing power structures (Demos 2010). At the fertile intersection of art and ecology, this generative potential catalyses a multidimensional field of inquiry and practice. Novel assemblages of knowledge coalesce, fostering collaborative discourses across disciplinary and methodological divides. It is not surprising that artists are incorporating texts from environmental humanities and social sciences into their work, in a constant redefinition and questioning of existing theoretical canons. The writings of influential theorists like Elizabeth Povinelli, Donna Haraway, Bruno Latour, Malcom Ferdinand, Eduardo Kohn, Kathryn Yusoff, Isabelle Stengers, Anna Tsing, Arturo Escobar, Timothy Morton, and many others resonate deeply within the work of artists

across the globe.[1] Likewise, much of the anthropological and humanities scholarly work engaging with issues such as environmental justice, extractivism, and the politics of climate change is increasingly incorporating the work of artists and artist researchers to imaginatively expand, decolonise, and undiscipline the methodologies of traditional scholarly research.[2] This shared language signifies the emergence of an ecology of concepts, a common ground interconnected through the pursuit of deeper understandings and more just ways of being in the world.

The present volume aims to contribute to fostering this common ground. It collects essays from a diversity of perspectives and practices that speak to the entanglements of art, ecology, and multispecies justice. While varied in approach, together they reveal the potential of building relations and collective futures between theory and practice, humanities and sciences, human and more-than-human agencies in the face of ecological precarity. The authors contributing to this volume encompass artist-researchers, art writers, and scholars, demonstrating the generative dialogue between these complementary, adjacent forms of inquiry.

The creative agency of non-human animals and environments and their collaborative potential within the arts in tracking and engendering systemic transformations are at the centre of the first three chapters. In "Exploring the Role of Non-Human Animals in Contemporary Art: As Objects, Matter, and Collaborators", Davide Tolfo describes the ways in which animals contribute to and shape contemporary art. Artists approach animals as objects enabling reflection, as materials that challenge perceptions of nature, and as collaborators reshaping boundaries between creator, creation, and viewer. Tolfo highlights the evolving human-animal relationship in art, acknowledging potential overlaps between categories and inviting consideration of animal agency, welfare, and implications in art collaborations. The essay does not propose just a categorisation, but instead asks readers to consider the ever evolving web of relationships and dialogues between art, animals, and humans, inviting radical decentrings.

Concepción Cortes Zulueta presents an intimate perspective on blackbirds, interrogating non-human creative practices and their relationship with the Anthropocene epoch. The blackbirds described in "Blackbird Songs: More-than-Human Aural Histories in the Anthropocene" are not just ecological entities, but witnesses, actors, and 'practitioners' within anthropic landscapes. Ubiquitous across regions, these birds embody sociopolitical narratives with gendered appearances and behaviours, reflecting dynamics of visibility and audibility. Ironically, while their songs reverberate through environments, blackbirds often remain unheard. The COVID-19 pandemic exposed their significant presence as human noise dimmed and avian polyphonies took centre stage. The pandemic invited deeper engagement with birdsong's aesthetic richness and eco-political implications, reflecting the evolving auditory landscape influenced by urbanisation, technology, and modernity. Blackbird calls, whether mimicking fellow birds or technosonic imprints, challenge listeners to confront nature, culture, and

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1 Some of these include Aloi 2018; Escobar 2018; Haraway 2016; Kohn 2013; Latour 2017; Marder 2013; Morton 2016; Ferdinand 2019; Povinelli 2016; Stengers 2010; Tsing 2015; Yusoff 2018.

2 See for instance the work of Macarena Gomez-Barris and Elizabeth DeLoughrey, among many others (Gómez-Barris 2017; DeLoughrey 2019).

the politics shaping our world.

In his chapter, Pietro Consolandi embarks on a journey through humanity's primal drive to connect with their surrounding environment, beginning with ancient Sulawesi cave paintings. This innate link is further explored through collaborative works of multidisciplinary artists like Aki Inomata, who challenge ontological boundaries to reflect a harmonious relationship with nature. Shifting perspective, Consolandi examines representing space through cartography. Tupaia's Pacific map blends Polynesian and British conventions, demonstrating a synthesis of worldviews. The work of contemporary artists like Tita Salina and Irwan Ahmett as well as Rashad Salim is considered within this framework. Consolandi positions artists not as isolated creators, but integral components in an ecological and historical web of relations, drawing on the pluriversal perspectives of theorists like Arturo Escobar.

As industrial activity has irrevocably transformed landscapes through century-long processes of extractive violence and disruption, artists and practitioners can cultivate speculative imaginaries within these ruptured zones that gesture towards as-yet-unknown ecologies of care and renewal. Sam Risley is an artist that works with film, installations, and sculpture; in his chapter, "Enchanted Cutaway: Nurturing Imaginations through Regrowth and Remembrance in the Altered Landscape of the Weald", he shares his research into the impacts of iron extraction on the Cutaway woodland in the Weald region of England. Through monthly visits, Risley notices traces of industry and seeks to rekindle his connection to this land. Risley's practice involves attentive listening and intimate relationship building with the environment. He argues that this type of visitation may help contrast capitalist tendencies that sever human bonds with nature. His work recognises the woodland's violent history yet emphasises regrowth and remembrance, as his practice of staying with a place is a conscious, nurturing way of guarding the forest. Risley uses photo, video, and writing to uncover histories and reimagine the woodland's future, excavating layers of meaning within the landscape, and reorienting perspectives on the climate crisis.

Designer and researcher Matthew Darmour-Paul presents his own speculative design interventions into the Silicon Prairie in the American Midwest, examining the materialisation of platform capitalism in rural America. Darmour-Paul proposes *Digital Permaculture* to re-purpose extractive technologies toward an ecologically aware and regenerative internet infrastructure. His practice manifests alternative IT networks through designs like data mining facilities enabling prairie conservation, repurposed grain silos storing data, and disused irrigation equipment becoming wi-fi signal boosters. Blending architecture, research, and imaginative world-building, Darmour-Paul's work envisions a more just technological future for the American Midwest. His designs highlight linkages between land, infrastructure, and digital systems pushing back against platform capitalism's homogenising tendencies, aiming to uproot the damaging, pervasive monoculture of internet infrastructures.

Bridging the invisible worlds below the threshold of human perception, contemporary artists unravel the agency of nuclear particles, microbial symbioses, and technological networks. Their practices illuminate how human meanings emerge through complex intra-actions with vibrant matter (Barad 2007), challenging assumed boundaries between organic and inorganic, human and more-than-human. In the essay "Reintegrating Nuclear

Knowledge Through Contemporary. Art Transforming Repositories into Living Archives", Giulia Melchionda addresses radioactive waste management, emphasising contemporary art's role in disseminating nuclear knowledge. Centred on Italy's waste disposal challenges and emerging artistic engagement, Melchionda presents the *Art Spaces* exhibition, providing insight into both Italy's nuclear context and art's relationship with nuclear heritage and public dissemination of knowledge. Interviews with artists underscore the importance of integrating art with nuclear discourse, suggesting nuclear concerns should be better conveyed within cultural discussions.

Ludovica Montecchio proposes a study of the 2022 exhibition *Metaspore* by Anicka Yi, an artist known for blending bioart and ecoart to represent bonds connecting human, microbial, and technological worlds. Yi's works stimulate the human sensorium to manifest the forms of life co-creating ecosystems in which humans exist. Countering the implicit hierarchy of senses, she emphasises the sense of olfaction, using smell as an immediate connector to nonhuman worlds. Works like *Skype Sweater* and *Shameplex* merge the organic with the artificial, blending political critique with microscopic scales. *Quarantine Tents*, created amidst the Ebola outbreak, critiques microbial fears while commenting on gender politics. For Montecchio, through a method she defines as 'cultural fermentation,' Yi's *Metaspore* invites a multisensory journey through acts of symbiosis between the biological and the technological allowing for an appreciation of the symbiotic relations constituting a holobiont assemblage.

From the enduring wounds of plantation legacies to the exclusions of urban architecture, to the necropolitical dimension of migrations and displacements, art practices expose the violent and toxic phenomena that shape human relationships with the more-than-human world. Their practices bring subjugated histories to the surface and imagine decolonial futures, exposing the persistent disparities of racial capitalism while imagining possible ecologies of care.

In her chapter, "Exploring the Plantationocene Through Works by Otobong Nkanga", Rebecka Öhrström Kann, artist and writer, focuses on the art of influential artists Otobong Nkanga, from the perspective of the Plantationocene paradigm. Popularised by theorists Donna Haraway and Anna Tsing, this conceptualisation sheds light on the transformative epoch marked by aggressive extraction practices rooted in colonial power and relying on vulnerable racialised labour. According to Öhrström Kann, Nkanga's oeuvre paints a vivid picture of the links among land, the body, and labour, highlighting the colonial dimension of Nigerian and Namibian mineral mining. Her work speaks to the commodification of vegetal beings and humans within racial capitalism. Kann draws upon diverse scholarly works, offering an understanding of how Nkanga's artwork challenges Anthropocene narratives, unveiling persistent disparities and colonialism's enduring marks on the planet.

The essay by Tommaso Gonzo and Giovanni Lorenzi, "Wasting Trajectories and Generative Ecologies: Leone Contini's *Foreign Farmers*", considers Leone Contini's project, *Foreign Farmers*, which was part of Manifesta 12 in Palermo, Italy (2008). The work featured a vegetable garden, consisting of various non-native plant species, generously provided to Contini by migrant gardeners from various regions across Italy. Through the discerning frameworks of decolonial ecology and Marco Armiero's Wasteocene paradigm, the authors interpret Contini's installation as a prism to reflect on

emergent ecologies initiated by migratory movements, especially amid the unfolding climate crisis. By extending Christina Sharpe's metaphor of the *wake* to the contemporary context of Mediterranean migrations, the authors suggest a critical examination of how migrants endure the lingering echoes of colonial brutality.

Zoe Rogers' artistic practice involves researching New York City's privatised, inaccessible waterfront. She investigates the city's hostile architecture preventing public water access, imagining alternative outcomes through materiality, craft, and open-source research. Her practice centres autonomy, creating intimacy with materials and exposing toxicity through environmental justice. She explores the informal junctions of ecology and capitalism through methods like collage, performance, and sculpture. Rogers considers her own embeddedness in toxic systems, moving outside of human-centred ontologies, emphasising humans' mutual relationships with their surroundings.

The volume concludes with a conversation with artist duo Beate Geissler and Oliver Sann about their project *How does the World End for Others (?)*. A multidisciplinary installation structured as two timelines, it juxtaposes geo-historical events from Earth's origins to the Anthropocene epoch with excerpts from 47 works of science fiction and climate fiction. Meticulously arranged, these speculative futures adhere to a unique chronology that begins in 2022 per *Soylent Green* and ends in 2393 per Erik M. Conway and Naomi Oreskes' *The Collapse of Western Civilization*. This narrative progression cultivates an immersive sense of urgency, prompting contemplation of distant yet possibly imminent futures. In the conversation, Geissler and Sann share their ideas on how artists can contribute to current ecological debates, and on the relationship between speculative imagination and planetary realities.

The variety of approaches and subjects presented in the volume attests for a growing interest in studying ecological transformations, and the role of human and non-humans within them, through artistic research and practice. The contributions prove the possibility of seamlessly integrating ecological knowledge produced by artists through artistic methods or design theory in order to expand the field of discussion within the environmental humanities and social sciences. At the same time, orienting critical attention to the exhibition as a platform of theoretical production (see Berti 2022), as well as a testing space for hypotheses posited within scholarly research enables new venues for disseminating and diversifying ecological knowledge. The recurring engagement with paradigms like the Plantationocene and Capitalocene reveals a strive to tie racial capitalism and uneven power dynamics with ongoing planetary crisis. Meanwhile, the emphasis on exposing toxicities and reclaiming anthropocenic landscapes demonstrates broader environmental justice priorities. The collection of essays points to the centrality of site-specificity, social practice, political engagement, self-critique, auto-ethnographic inquiry, and speculative thought in contemporary art practices. This highlights desires for situated, insurgent meaning-making to challenge the ontologies and imaginaries of extractive capital and neoliberal governance.

In many ways, these priorities build on and expand the interventions of previous generations of artists grappling with ecological concerns and the degradation of the planetary environment. However, there is also a renewed questioning not just of dominant systems, but of the role of the artist itself

within networks of knowledge production and power and within the pervasive logics of the market and the industry. The volume attempts to move beyond mere celebration of artistic practices, using creative research to deconstruct the figure of the artist and probe its potentials and limitations within the common ground it now shares with humanities and social science. This self-reflexivity promises to generate important critical discourse alongside creative outputs. Ultimately, what is revealed is a field alive with interdisciplinary exchanges, unruly epistemologies, and speculative visions that collectively kindle hope for more just futures across the rifts of the present.

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Building Common Ground
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Section 1
Collaborations with the Non-Human World

Exploring the Role of Non-Human Animals in Contemporary Art: As Objects, Matter, and Collaborators

Davide Tolfo
Independent scholar

Abstract   From the 1970s onwards, the presence of non-human animals within contemporary art has gradually become stronger. Animals have been involved in creating art installations, considered part of the artwork, or displayed as inanimate objects. This essay aims to describe three ways in which the individual lives and trajectories of non-human animals intersect with the world of contemporary art: as collaborators, objects, or as matter. Furthermore, the case studies presented demonstrate the need for a temporary methodological tripartition based on animals' different positions in the various artworks. Ultimately, this essay sheds light on a largely unexplored history, revealing the complex relationship between non-human animals and contemporary art.

Keywords   Non-human animals. Contemporary art. Ecology. Ecomaterialism. Multispecies studies.

Summary   1 Introduction. – 2 Animals as Objects. – 3 Animals as Matter. – 4 Animals as Collaborators. –5 Conclusion.

1   Introduction

In her article on the proliferation of animals in contemporary art, Ana Teixeira Pinto ([2015] 2016, 109) argues that animality plays a crucial role in redefining the concept of humanity. According to the scholar, animals have taken centre stage in contemporary art due to their ability to question the ontological and epistemological categories we use to draw a boundary between humans and non-humans. In this sense, for Teixeira Pinto, they play a fundamental role, occupying the place that social and political struggles had left vacant within art. Briefly, Teixeira Pinto highlighted the theoretical connections that united the emergence of these practices with the configuration of new forms of materialist thought, such as 'object-oriented ontology' (Morton 2013; Harman 2018a), speculative realism (Bryant, Srnicek, Harman 2011; Harman 2018a), and interspecies feminisms (Bennett 2010; Braidotti 2013; Haraway 2016).

Significant changes can be observed almost ten years after Texeira Pinto's text. Firstly, several artists have completely absorbed these perspectives, proposing works that can be approached in a detached and critical manner. Secondly, expanding climate-related issues linked to the Anthropocene have led to different ways of interfacing and coexisting with non-human agents (Demos 2020). While animality is still a way of radically rethinking the human, it is also true that this rethinking now takes on forms and urgency that were previously only hinted at. The perspective proposed in this essay arises from these changes. Through some case studies, this essay aims to outline three different modalities of interacting with non-human animals in contemporary art. Specifically, it will be shown how they are involved as *collaborators*, understood as *objects*, or employed as *material*. These three modes correlate to three distinct responses: while material must be *interpreted*, that is, it must be brought back within a plot of knowledge and powers that legitimise its use as a work of art, the object must be *thought*. Uprooted from the ecosystem, the animal understood as an object ceases to be seen as a living being and becomes a speculative element. On the other hand, in collaboration, the relationship with animals finds its point of support in mutual *observation*.

Before presenting this tripartition in detail, a critical premise must be added. This division should not be understood in a value or hierarchical sense. It is not about establishing two opposing poles – materiality on the one hand and involvement on the other – in which the agency of non-humans is denied or granted epistemic recognition. Nor is it a teleological path guided by a greater approach to recognising the rights of animals. Precisely because these issues have a different weight in the artists that will be examined, it would be reductionist to associate the three proposed categories with a nucleus of values and pre-established positions. Observed, interpreted, or thought, the presence of animals in contemporary art bears witness to a longer but not always visible presence within human knowledge and discoveries. As a place where transversal knowledge meet, contemporary art reveals its importance in assembling the invisible traces and signals that animal bodies have left behind as they cross paths with human stories.

2 Animals as Objects

In his work, *The Postmodern Animal*, Steve Baker (2000) argues that the presence of animals in art was not a question that arose in modern art. By this, of course, it is not meant that there were no representations of animals, but rather that the animals encountered in nineteenth-century art appear as symbols of something that exceeds their presence (19-20). Beyond the historical and artistic accuracy of this strong claim, what is essential for this research is to focus on the use of animals as symbols. In Peirce's classical definition of a symbol, the latter is understood as

> a sign which refers to the Object that it denotes by virtue of a law, usually an association of general ideas, which operates to cause the Symbol to be interpreted as referring to that Object. (Peirce 1992, 292)

This association of general ideas, or convention, acts as an interpretive and evaluative intermediary between the object and its interpretant. It is

easy to understand how this mechanism involves animals in art. As symbols of a meaning that exceeds their presence, they lose their traits to become representatives of anthropomorphic conceptions, knowledge, and values. Shielded by these attributions, animals, even if placed at the centre of the scene, are separated from any possible encounter. As *Guernica*'s dying horse or Brancusi's birds, they are part of historical and artistic movements that involve them only metaphorically (Baker 2000, 21). During the performance *Coyote: I Like America and America Likes Me*, which took place in New York, Joseph Beuys engages with the coyote he cohabited with for several days using symbolic language (Beuys 2008). The artist involves the inhuman guest in a collective work that concerns its connection to Native American mythologies (Beuys 2017, 89-90). Baker (2000, 46) suggests that the performance's unpredictability undermines the idea of human control, implying that the animal's actions were beyond human influence. As such, it is equally reasonable to contend that the symbolic depiction of the animal can indirectly represent any manifestation of independence. The coyote, in this instance, alludes to the metaphorical 'other' – the mythology and knowledge of Native Americans – which is always in flux and viewed as an independent agent. If the conditions of the existence of Native Americans and their cultural identity do not cease to change because of historical, political, and economic processes, the coyote, considered in its animal specificity, would seem to remain an entity without history and relationships (Haraway 2004b; Teixeira Pinto [2015] 2016, 107). In this sense, animals appear as objects for reflection, starting points for speculation on the limits and potential of art.

This process occurs also when they are not intended as symbols but as alienating presences. The twelve horses that Kounellis brought into the spaces of the Roman gallery L'Attico in 1969 caused a stir because of the sense of estrangement they aroused in the spectators (Kounellis 2003, 102-11). The significance of Kounellis' work lies not in the symbolism of the animals, but rather in the way it fits into the larger reconsideration of materials in Arte Povera. Even when the animal is present as a living being, it does not automatically become an entity endowed with its singularity. In Kounellis's work, certain aspects related to the living presence of animals, such as their scent and the noises they could produce (Aloi 2012, 9), certainly take centre stage. However, when placed within a theoretical framework in which they challenged the invisible rules governing art galleries[1] (Petican 2012, 187-8), their singularity as living and autonomous entities diminished, functioning as a surrogate for a generic other: The Nature, The Other, The Organic (Baker 2000, 95). The horses become a generic singular[2] (Derrida 2008) that does not permit an exchange of gazes between spectators and animals:

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[1] This perspective is also underlined by the art critic Alberto Boatto's commentary, who described Kounellis's artwork as "a challenge to the established order of the art market" for its ability to "turn the dealer into a stable boy" (La Berge 2019, 135).

[2] The concept of generic singular, or collective singular, denotes the specist tendency to encapsulate individual non-human animal entities within a broad and abstract term through the use of the singular form. The concept of 'Animal' serves a dual purpose: it creates a unified and unchanging framework within which to aggregate diverse forms of non-human life and existence, while also generating, through contrast and exclusion, an equally abstract and collective notion for the 'Human'. The normative connotation implicit in this latter concept plays a pivotal role in engendering discriminations and power dynamics. On this extensive topic, see Agamben 2004; Castricano 2008; Derrida 2009; Filippi 2017.

> They were in this sense a "poor art" and a material of poverty; as such, the horses represented certain labors including those of craft, of farming, of the field. The horses present, then, as similar to material found in Kounellis's other works, which have included masonry, live birds, coffee beans, and wood cuts. The fact that his works are often untitled only draws more attention to how the material instantiation overrides any description or articulation of itself. (La Berge 2019, 134-5)

Considered as objects, the bodies of animals become reflective surfaces, that is, tools for self-reflection. As Baker (2000, 53) writes about Rauschenberg's *Monogram*, it is only the physical presence of the spectator, in a sense, that completes the artwork. The goat and the tire at the centre of this installation become an obstacle, a speculative punch for the spectators. The weird that stimulates reflection is not the animal nor the other objects that make up *Monogram* (Steinberg, Rauschenberg 2000), but a third additional element, namely the space that allows the encounter between the taxidermied body of the goat and the living gaze of the spectators.

The artist who more than anyone else has taken to the extreme consequences of the process of objectification of animals is undoubtedly Damien Hirst. In works such as *The Physical Impossibility of Death in the Mind of Someone Living* and *This Little Piggy Went to Market, This Little Piggy Stayed Home*, what is enclosed in the boxes is immediately recognised as an animal, but it does not stop producing a strange sensation of incompatibility. Although exposing the insides of these animals and therefore employing the physicality of animal organs and tissues, Hirst's works return the animals to the spectators in the fixedness of their presence (Kent 2003). The dynamism of their bodies is obstructed from the outset by the stereotypical poses in which they are preserved. The importance of these works lies precisely in this ability to show the process that transforms animals into meat, into organic matter (Broglio 2011, 1), but still blocking the dynamics at a previous stage, the moment when the animal is still recognised as such, but no longer as a living being.

Suspended in a limbo of formaldehyde, they find themselves in a middle position: too material for living beings, too close to living beings to become meat. This middle position makes objective scientific knowledge of animal bodies possible. By transforming the interior into the exterior, operating on their skin and muscle tissues, Hirst's works expose the animal body to an anatomical interrogation. Protected by glass, visitors are involved in this operation only as detached observers, witnesses to the norms by which living beings become means of appropriation and epistemic knowledge (Berger 2009, 10-13; Broglio 2011, 8). To take up how Hirst has described his operations, it is a matter of knowing the world by abstracting, isolating its different elements, and fixing the dynamism of the living to observe and know them (Baker 2000, 129-30; Hirst 2005, 279). In this sense, his works present themselves as postmodern reenactments of the anthropocentric division of living beings into taxonomies.

It is important to emphasise that the described perspective does not necessarily entail adherence to anthropocentric positions. While presenting animals in objectified forms, the works by Mark Dion, Rosemarie Trockel, Carsten Höller, and Snæbjörnsdóttir/Wilson can be analysed as important critical examples. The human skeleton at the centre of Mark Dion's *Theatrum Mundi: Armarium* visually expresses the epistemological paradigm

that emerged in the late seventeenth century (Foucault 2007; 2010), formed through the joint separation of human nature and nature itself (Aloi 2018, 101). The role that the use of man as the measure and unit of the world played in this dynamic is succinctly summarised by Philippe Descola:

> If the idea of nature acquired such importance in the seventeenth century, it was certainly not because the powerful vibration of the life of the world was suddenly perceived by eyes now unsealed that would in future never cease to endeavor to fathom its mysteries and define its limitations. For that notion of nature was indissociable from another, namely that of human nature, which the former had engendered through a kind of fission when, in order to determine a place in which the mechanisms and regularities of nature could be discerned, a tiny portion of being was detached to serve as a fixed point. (Descola 2014, 45)

Thus, the gap established in parallel with the invention of Nature only becomes operational when it clears the space for a methodological transcendence (Agamben 2004).

Unlike Kounellis' horses, *A House for Pigs and People* by Rosemarie Trockel and Carsten Höller brings the visitors' gaze into contact with that of the pigs that occupy a specific section of the exhibition space, separated by a dividing glass (Höller, Trockel 1997). This screened observation of the animals proposes the functional objective detachment in making them objects of thought. The cultural transformation of living beings is even more evident in Bryndís Snæbjörnsdóttir and Mark Wilson's work, *nanoq: flat out and bluesome*. Starting from a photographic investigation of polar bears taxidermied in the United Kingdom, the two artists exhibited ten specimens in a show at Spike Island, Bristol, attempting to reconstruct the history of their capture, death, and preservation (Snæbjörnsdóttir 2006). From this work, it is possible to derive two other critical functions of animals exhibited as objects. Firstly, highlighting the postures in which they are conserved reveals the uncertain cultural standing that they are associated with, even in their living state. On the one hand, they are presented as fierce creatures, entities potentially dangerous to order and safety, but also as challenges to human rationality (Haraway 2004a, 151-98). As objects of study or trophies, they never cease to refer to their difference in the natural order, to the wild and untamable side. On the other hand, they can also be ascribed in the opposite process by attributing anthropomorphic traits, which Broglio (2011, 74) defines as a Disneyfication of their characteristics. Secondly, as Giovanni Aloi writes, Snæbjörnsdóttir and Wilson show the intricate relationship of knowledge and power that presides over taxidermy practices (Aloi 2018, 67-8). Taken from salons and natural history museums, bears are called to perform a different function. They become traces of sociological, cultural, and economic processes allowing their commodification and objectification.

3   Animals as Matter

Jordan Baseman's *The Cat and The Dog* and Berlinde De Bruyckere's *K 36 (The Black Horse)* seem to create friction with the description of animals used as objects provided in the previous paragraph. In Baseman's work, the skinned furs of a cat and a dog are exhibited accompanied by their respective remodeled heads (Baker 2006, 87-9). In *K 36 (The Black Horse)*, instead, De Bruyckere used the body of a dead horse repositioned in enigmatic forms (Aloi 2018, 214-17). In both cases, the bodies of dead animals are used as artistic objects. However, in these works, another aspect emerges, namely the materiality of animal bodies. The fur, the epidermal surfaces, and the limbs are separated from the rest of the animal's body to be used as individual expressive means or recombined in new forms. From this point of view, Thomas Grünfeld's *Misfits* series and Dorothy Cross' *Vaulting Horse* accentuate two important characteristics only hinted at in *The Cat and The Dog* and *K 36 (The Black Horse). Misfits* consists of invented blended creatures by Grünfeld, incorporating parts of different animals (Wilson 2003, 107-8). Thus, the new species invite the viewer to deconstruct the individual pieces visually and relate them to their natural owners. *Vaulting Horse* employs the skin and udders of a cow to cover a horse's saddle, creating a strange surrealist object. In both works, transforming animals into organic materials allows for developing other possible uses of their bodies. In this sense, it is only through a process of interpretation that the divided materiality can be traced back to the original living body. While the animal exhibited as an object requires a distance that allows for objective analysis, i.e. to classify and hypostatise it, the use of animal materiality occurs from within the animal itself. Although these two processes are similar, they show meaningful differences. In both cases, what is lost is the living aspect of the animal. Here, however, not through a methodological distancing but through an opposite movement of approaching the organic and physical nature of the animal:

> Meat makes the animal's insides visible, and the animal's body becomes knowable through sight. Moreover, while meat serves as a means for us to take in the animal visually and intellectually, it also marks the moment when the animal becomes physically consumable. (Broglio 2011, 1)

In the performance-rituals of Hermann Nitsch, it is precisely this process of dismemberment and reduction to matter that is placed as a central element (Timofeeva 2018, 34-6). Unlike the orgiastic and dynamic use of animal elements in these actions, the leather dress (*Vanitas: Flesh Dress for an Albino Anorectic*) created by Jana Sterbak (Broglio, Hatry 2021, 119-20) presents itself as a monument to the concealment of the animal in flesh. Used as a dress, the flesh no longer refers to the living being to which it belongs but also displaces the association of flesh with meat. Worn as a garment, meat not only ceases to evoke the living being to which it belongs but also displaces the association that links it to food.[3] The only reference to consumption remains the physical deterioration of the meat and the allusion to the artistic *vanitas* to which the title refers.

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3 On this central issue for anti-speciesism, see Rifkin 1993; Foer 2010; Filippi 2017; Gruen, Probyn-Rapsey 2019; Herzog 2021.

The works of South African artist Nandipha Mntambo also inscribe themselves into this critical use of materiality. In her works, animal skin becomes a means to rethink how corporeality and female desire are represented (Mntambo [2018] 2021). In *Umfanekiso wesibuko* (*Mirror Image*), two cowhides are arranged in a way that recalls female figures, without heads, crawling on the floor. Following the analyses that Giovanni Aloi dedicates to the work, Mntambo highlights the connection between the reduction of female bodies to only sexual parts and the removal of the animal from the meat (Aloi 2018, 213-14). To interpret the use of these materials in a critical sense, that is, to retrace this imaginative dismemberment process in reverse, means to bring out the ideological and social presuppositions through which female and animal bodies are conceived as passive and, therefore, potentially consumable (Adams 2017).

4 Animals as Collaborators

The works of the English artists Olly and Suzi are often cited as examples of artistic collaboration with animals (Olly, Suzi 2003). By allowing a shark to bite into their canvas, letting an anaconda slither across their painting, or exposing their artwork to a curious group of cheetahs, the two artists not only included animals in their art but made them the protagonists. These forms of animal involvement do not exhaust the range of collaborative forms developed in contemporary artistic experiments. The reindeer of Carsten Höller (Zyman, Ebersberger 2020, 422-31), the chickens of Petrit Halilaj (Halilaj, Scardi 2021), the spiders of Tomás Saraceno (Saraceno 2020), and the hermit crab of Pierre Huyghe are just a few examples of very diverse interspecies interactions. Treated as collaborators, animals are included in the artistic process based on their singularity, that is, by observing their different ways of operating, reworking, and moving in their surrounding environments. Unburdened by heavy symbolism, nor immobilised within mere physical materiality, the animal here positions itself as the subject of an encounter, as an agent whose presence cannot be entirely reduced to familiar patterns and behaviors. It is within this framework that the concept of agency assumes a key role. Considered in their singularity – meaning their ability to organise and experience the world around them as subjects capable of positively interacting with the environment and other entities that are part of it – each individual animal is potentially encountered based on the form of agency that characterises it (Hribal 2007; Colling 2020). Artworks thus become forms of reaction and exchange in response to this exercise of observation.

In his works, the French artist Hubert Duprat relies on Trichoptera's constructive and artistic abilities (Wilson 2003, 116-17). In their larval stage, these freshwater insects create a protective cocoon with surrounding materials held together by a filamentous substance secreted from a gland near the mouth. By placing the Trichoptera in aquariums containing fragments of gold and precious stones, Duprat creates golden shells with their collaboration. Thus, aquatic creatures become co-producers of the artwork.

Certainly, in these operations and in the works of Olly and Suzy, it is difficult to conceal the naive aspect that animates the need to involve animals (Broglio 2011, 94). Visiting these animals' natural habitats lends itself to a double reading. On the one hand, it highlights the importance that

the two artists attribute to the wild and untamed nature of animals, indirectly showing the ecological relationships that link animals to the environments in which they live. On the other hand, this need to elicit reactions from animals that can be documented in the artwork as if they were authentic signatures raises doubts. In other words, the traces of animal presence become pivotal. These imprints are evidence of their passage and creative contribution.

In contrast, in Pierre Huyghe's works, involvement with animals takes the form of their presence in the artworks themselves. To the point where once disappeared from the scene, the artwork ceases to function as such. *Untilled*, presented by Huyghe at Karlsaue Park (Kassel) for Documenta 13, places a reclining female statue with her face covered by a beehive at the centre of the scene (Documenta 13, 2012). The bees, attracted by the medicinal and hallucinogenic plants the artist had placed nearby, create circular trajectories attracted by different chemical stimuli. Sporadically, Human and Señor, specimens of Podenco ibicenco that move freely near the installation, make their appearance. Completing *Untilled* is an uprooted oak tree from Beuys work *700 Eichen*, presented at Documenta 7, and a bench, taken from the work that Dominique Gonzalez-Foerster had created for Documenta 11. The involved bees and dogs make this work an open and continually evolving construction site (Huyghe 2018). Their movements show a different sense of timing in contrast to the works of Olly and Suzy. The two English artists aim to stage an encounter with animals, transforming the artwork into the surface where the contingent presence of animal bodies is inscribed. As they stated in an interview, this mode of operation helps to understand the precarious situation of these creatures' lives: "the animals are here now, they just might not be for much longer" (Baker 2000, 13). In contrast, in *Untilled*, the real encounter with animals is fundamental for the hybrid ecosystem they are called to be part of. What is created is a cohabitation zone between biological elements and inorganic entities, but also signs and references to the history of art itself.[4] In these environments of heterogeneous elements, the movements of living beings pose as dynamic factors, making the entire composition unpredictable. What is at stake is multiple perspectives: the chance to examine various ecosystems through the unique modes of existence that shape them. Observing and reciprocating the gaze with the actors who constitute this network of relationships allows for the transformation of installations into thresholds of passage, places where one can potentially encounter "a narrow abyss of non-comprehension" (Berger 2009, 3) stemming from the complicity of familiarity and estrangement of animal gazes. Therefore, the artwork ceases to be the sign of collaboration with animals and instead becomes the environment, the physical space in which the collaboration occurs.

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[4]   What emerges in this way is what the curator and art critic Nicolas Bourriaud has defined as an aestethics of the Capitolocene. This entails the ability of contemporary artists to operate inside a broader semiotic system in which animal signals, vegetal inscriptions, and mineral elements also participate. For Bourriaud, collaborations with non-human entities are not in themselves a novelty. What marks a radical shift is the different conception underlying these artistic operations. Industrial artifacts, vegetative entities, and non-human beings are understood, although in their differences, in a dialectic relationship, showing themselves as a part of the same semiotic ecosystem. See in this regard the chapter "Portrait of the Artist as a Butterfly" in Bourriaud 2022, 81-95.

5   Conclusion

In the preceding three paragraphs, I have attempted to define the characteristics and processes that lead animals to be conceived as objects, matter, or collaborators in contemporary art. In conclusion, it is worth highlighting some issues that have only been touched upon. As can be inferred, this division was not made to provide rigid categories. Instead, it has allowed for perspectives that complicate readings on the use of animals in art. In this sense, rather than being read as a completed work, it should be understood as a sketch, a first draft that should be completed by providing further case studies and counter-arguments. For example, a more focused analysis on the agency of non-human beings, as could be a perspective deriving from critical animal studies and anti-speciesism, could undoubtedly show the limits that the critical use of animal materials could bring.

Similarly, a study highlighting the freedom of movement, actions, and, above all, the degree of the welfare of the animals involved in what have been brought up as examples of forms of collaboration could undoubtedly impact the arguments put forward. Starting from the awareness of these limits, this research was deliberately carried out by limiting the field of observation and the theoretical tools put into play, in order to define a plan for possible future development. At the same time, it may be necessary to broaden further the analysis of the contact zones between these three different uses. Some case studies reported present themselves as places where the three forms intersect. Furthermore, it is precisely in these blurred zones, where the overall framework proposed invites further explorations, that the most exciting aspects of the proposed formulation can be seen. "Like the productions of a decadent gardener who cannot keep good distinctions between natures and cultures straight", to quote a decisive passage by Haraway (2003, 9), the proposed distinctions do not stand as artistic taxonomies, but as "trellis or an esplanade" elements that show their importance in knowing how to trespass into each other without losing objectivity.

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Blackbird Songs: More-than-Human Aural Histories in the Anthropocene

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Abstract   Due to the anthropocenic momentum of the pandemic, birdsong turned into an alternative avenue of research. First, the relative human silence allowed birds to be more present and audible, even if they were singing at a lower volume, and this aroused a nostalgia for what we were losing to anthropogenic noise. Then, a reflection followed about how history and birdsong intertwined, even about birdsong as history, as a non-human or more-than-human history that sings and offers multispecies stories of a certain place and time. This chapter adopts a situated approach that combines academic research with moments of attentive listening and personal experiences involving birds and their sounds and specifically, blackbirds, and an individual male blackbird in particular. Stressing the materiality of the text and the instant (of listening, of writing) it attempts to offer, in parallel, blackbird episodes as lived and listened to from a human perspective together with a reflection on the songs of this blackbird as a collection of sounds (from other birds, from humans) selected from the surrounding soundscape in as many episodes, with the aim of presenting those songs as more-than-human stories and histories of that situated place.

Keywords   Birdsong. Blackbird. Aurality. Mimicry. Narratives.

In the gardens of a complex of tourist apartments located in a medium-size village on the south coast of Spain, there is a local blackbird (*Turdus merula*) that can be heard singing for long hours, day and night, from mid-winter to late summer, perched above the garage of a car workshop. This blackbird, besides singing his own themes (a percentage of which he shares with other blackbirds nearby, like a local, cultural, repertoire), also mimics and archives several other birds and some anthropogenic noises. Mixed with the rest of the song of this blackbird, there is an imitation of the call of a rooster.

Because, although the blackbird sings close to the tourist seafront, a hundred meters inland the area is still rural, with crops, goats, chickens and plastic greenhouses. A busy road separates the rural area from the more urbanised seaside, and the blackbird reminds us about it by imitating car brakes screeching on the adjacent roundabout, as well as by singing the roar of an engine and other metallic frictions that have accompanied humans since the Industrial Revolution. In his song, the blackbird combines this machinistic past-present with a more digital and supposedly ludic present-future that he echoes in the form of recurring beeps and electronic alarms, or the ringtone of a smartphone. He also borrows the voices of several species of other birds. Both the menaced, declining ones and the introduced parakeets that signal the degraded environment. Either predators or prey.

Hence, the songs and imitations of this blackbird are an aural archive and narrative of the history of his surroundings, created by a non-human animal, in a non-human manner. Because the blackbird listens to the soundscape, selects and then composes and sings back, archiving, narrating and singing the histories of the place where he[1] lives.

> [early morning, first light, walking out]
> a blackbird has landed on the pavement
> and he watches me behind his round eyes, curious.[2]

In my life, and lived places, blackbirds (common blackbirds, *Turdus merula*, *mirlos* in Spanish, or *merli* in Italian) have always been around. If maybe not exactly the default bird – that honour would perhaps be more fitting for the common but unfortunately declining house sparrow – when growing up in a southwestern European temperate region like the centre of the Iberian plateau, blackbirds were those other bigger and darker birds, hanging out mostly on their own around gardens, parks and suburban areas. Birds that were instantly recognisable, with their long tails and their half solemn, half electric mannerisms. Like when one of them freezes for long seconds after noticing you, her or his head up, evaluating the situation with bright, dark eyes more or less noticeably rimmed with orange, then to decide to abruptly resume his or her activities, lowering the head and running full speed, charging across the grass. Or when you hear noises coming from the undergrowth or a pile of fallen leaves, and afterwards a glimpse of frenzied feathers, beak and feet allows you to find out that a blackbird is responsible for the ruckus, throwing clods of soil and vegetal matter into the air, everywhere, while looking for food. In a way much like how you would picture a cartoon character, busy while searching for the keys in the sock drawer.

Blackbirds also feel like a lesson from a basic ornithology course presenting the urban birds of Eurasia, North Africa, and parts of South Asia – as well as of Australia and New Zealand, where they were introduced (Aparicio 2016, 12). First, the aforementioned house sparrows, and the visual differences between the darker and marked males and the greyish-brown females. Then, the blackbirds, with dark males and dark females, again

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[1]   In the case of blackbirds, males are the ones singing. However, in the last years more attention has been paid to female song, since in the majority of species females do sing, contrary to what was believed in the past due to a bias that imposed as a world standard what was prevalent in temperate regions: Odom et al. 2014.

[2]   Verses between sections are by the Author.

distinct because of sexual dimorphism, but with subtler differences for the untrained eye. Female blackbirds are not really black, but dark brown, with a slightly mottled breast, so the English name of the species does not describe them adequately. Male blackbirds, treated as better representatives for the whole species, are the black ones, with glossy black feathers and bright orange or yellow bills.

Still, it remains feasible to visually distinguish the dark brown female blackbirds from the black male blackbirds. Especially if you share the same area with them, due to all the opportunities they provide to practice. In these circumstances it is almost impossible to avoid *black*birds, not to see them or to hear them, not to cross paths with them on a daily basis: momentarily standing in your way, perching on a cable or a lamppost, or flying away while yawping an alarm call. Yet, at times it is surprising how little some people notice blackbirds, provided they know what a blackbird is. This appears to be a symptom of the general disconnection because of which many people do not pay attention to birds at all. Birds are part of the daily background, they are undeniably there, but even if they are perceived unconsciously, they are not registered. Unless something remarkable or out of the ordinary happens, and then they are acknowledged. However, if you are a human living among blackbirds, they surely are still here, as pausing and looking out of the window, attentive and careful listening, or a short walk will demonstrate.

Due to the anthropocenic momentum of the pandemic, people started paying more attention to birds from their windows, particularly to their sounds and singing (Mynott 2020; Pritchard 2020). Birdsong turned into an alternative avenue of research, or a route, already trodden, in which to dive in and delve more deeply. As illustrated by concepts like the "Phonocene", coined by Vinciane Despret after a statement by Donna Haraway calling for "the ear to hear terrestrial sounds, the sounds of everything linked to the earth, and it includes the atmosphere" (Vincent 2019).[3] Despret herself introduced her book *Habiter en Oiseau* with a segment (first chord, counterpoint) devoted to a blackbird:

> At first, it was a blackbird. My bedroom window had been left open for the first time in months, like a sign of victory over the winter. His song woke me up at dawn. He sang with all his heart, with all his strength, with all his blackbird's talent. Another one responded from a little bit further away, without doubt from a chimney in the vicinity. I couldn't go back to sleep. (13-14)

In what follows, she explains that what kept her awake and attentive, intrigued and amazed, were the incessant variations and counterpoints of the blackbird, the succession of sung phrases shaping his account, full of sentences that felt so close to the spoken word, a "roman audiophonique" in which beauty, silence, and song were in tension, at stake, resting on the shoulders of that blackbird: "My window, from that day on, remained open every night" (13).

That sentiment resonates with me. Particularly when in a subsequent event, a reading-cum-performance in collaboration with artists Mélanie

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3 Translation by the Author. The term "Phonocene"/*Phonocène* was not in the interview.

Courtinat and Antoine Bertin hosted by Barcelona's CCCB and titled *Phonocene* that took place during the pandemic (October 2020), Despret insinuated that, at some point, an attachment would be felt. The singing blackbird would become *votre merle*, 'your blackbird', mi *mirlo* (CCCB 2020). My windows remain open, as well, day and night, while the local blackbirds roam, call, and sing. Just right now, at dusk on an early May evening, in the gardens surrounding the apartment buildings of this coastal mainly – but not totally – holiday complex, a blackbird shrilled. This time, a very peculiar quavering squeal only heard when these birds are dealing with their fledgling chicks, already energetically strolling out of the nest. Minutes later, a bundle of adults, situated in different parts of the gardens, started their back and forth 'the dark is coming' *tchinks*, happening all year round, tails popping up and down with each call. Tonight, punctuated by occasional *ssrees*, the gliding shrieks endorsing the Doppler effect of the swifts, and the overarching whistles of the spotless starlings.[4] Then, a kestrel made his presence known, this time through a couple of high gurgles instead of the usual, ascending cascade of squawks, as a European robin *txan txan txan*s[5] from inside the bushes, and another blackbird issues a rattling alarm call in passing, while flying away, and while the remaining light keeps fading.

This twilight soundscape, and its accompanying scene, in a certain sense is like any other unravelling in the same place, at any moment of every day. It just happened that I was writing that bit at that point in time, space and page – now that I am revisiting the passage, mid-morning the next day, a blackbird sung an isolated phrase, in the distance, then becoming muzzled by the deafening start of a ride-on mower with its blaring, avid diesel-burning engine.[6] Once you focus, you can find one of these scenes occurring at each and every moment of any day, defining them and their context, and at the same time being shaped by it. And yet they are also distinct, peculiar, irreplaceable.

Like when, last year, while writing, I tried an experiment that failed in many ways, and perhaps succeeded in others. The idea was to write about blackbird sounds and wanderings as they were happening, on a mid-July day, almost at noon, coming and going to the window, so I could give a sense of their liveliness, of how present they can be for any human living among blackbirds. But even during an extreme heat wave at the end of the breeding season, it was hard to keep up because of so many blackbird songs, sounds and episodes taking place in a short period of time: my blackbird concluding a snippet of one of the local themes with a mimicry, a nightingale coda; this male blackbird and a female – probably the one that, several months ago, I had watched shredding the fibres that dangled from the trunk of a palm tree – refreshing and splashing in the irrigation puddles under the rose hedges; my blackbird then perched for long minutes on a 'No dogs allowed' sign, widely and intermittently opening his orange beak – maybe because of the heat? –; two or three young birds, displaying and charging across the

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4   For the different calls of blackbirds, see Dabelsteen 1982, 314; Aparicio 2016, 7.

5   The European robin, in Euskera *txantxangorri* due to this species' calls and red colour, has become the symbol of this language. https://www.deia.eus/actualidad/sociedad/2016/01/15/pequeno-petirrojo-o-txantxangorri-nuevo-5068315.html

6   The mower finally stopped and the blackbirds, starlings, sparrows, collared doves, *verdecillos*, and a passing monk parakeet were heard again. I could go on and on chronicling these conversations, this string of sounds, orbiting around avian voices.

grass and below the hedges, observed by my blackbird from a palm tree. Later, while at the computer, the singing of my blackbird got interrupted by a commotion, and when I went to the window, a kestrel was flying above the gardens with someone between his claws: oh no, life (and death) happens. It was a brownish bird, perhaps a sparrow, that the kestrel began to eat on the upper ledge of one of the balconies, tossing feathers around. After a pause, my blackbird resumed his singing, sentence after sentence, heard but not seen, with the occasional counterpoints from other birds.

Or, in another context, the morning prior to the nightfall scene described before, a blackbird alighted in the *tilde* above the accented letter I, part of the large sign 'FACULTAD DE FILOSOFÍA Y LETRAS' (Faculty of Philosophy and Arts) of free-standing metal letters, located at the entrance of campus, while I was beginning to climb the stairs. He spent a couple of minutes up there, perched in that word, murmuring a bit of song at first, changing his posture and nervously checking on me from time to time, as I snapped a couple of pictures. On this occasion a different site, an urban campus instead of a residential area. Although with plenty of blackbirds as well, flying between the lecture rooms and across the nearby botanical garden. One among them, singing from the trees or rooftops, stringing together portions that, for a moment, appeared to encompass another coda mimicking an absent nightingale, and also to carry the influence of several digital noises which, between lessons, became mingled with the hubbub of the students' discussions.

Blackbirds are there, then. And here, today, mid-afternoon, immersed in their sung dialogues, in another location on the Iberian Peninsula after my unexpected, impromptu trip inland. There it is: my local blackbird here just imitated the whistle of the knife grinder's pan flute. To know and to be aware of blackbirds – or of any other everyday bird – is just as simple, and as complicated, as paying attention, listening. However, that is the issue. They are always there, but they tend to be overlooked. Perceived merely as an aural background, not even overheard, only missed when they become silent, like in the pesticide-induced bird-apocalypse feared by Rachel Carson (1962) in *Silent Spring*. Just noticed when we lower our voices, and reduce anthropogenic noise. During pandemic lockdowns many people turned their attention back towards bird songs and calls, because they had the time, space and silence necessary to listen. Even to the point of thinking that birds were singing louder, since they could hear them more. Although, if anything, they were singing lower, due to the lack of competing human noise (Derryberry et al. 2020; Greene 2020). Later on, the lockdowns ended, the pandemic dwindled, ordinary routines resumed, and birds and their sounds were, again, largely forgotten, and left behind by the majority, receding to the aural background.

Albeit now it has become more challenging to pause and to listen, since the human world has accelerated its pace, increasing its disruptions and the impossibility of being there and capturing the instant. Especially, in the case of "critters" as lively as birds (Haraway 2008, 330 fn. 33). Any moment is difficult to register, to completely acknowledge as it is happening. So sometimes I wonder why that insistence on birds, on their instants and their sounds, by me, by others, or during the pandemic. And I ponder whether, to a certain extent, it is due to birds' decided grounding in all the nuances of the locations and ecosystems they inhabit; in the cycles of the seasons, underlined by their mutable songs and sounds, and in their aural

and multisensorial dimensions. Being, all of them, realms that we tend to elude, as if we were above them, no longer bound and subjected by them, distanced through our visual approach and elevated objectivity. A pretentious self-isolation that it is not just damming, but unattainable. I believe those are some of the reasons behind my attempts of – or may I say my compulsion towards – pausing, listening and rendering episodical reconstructions of avian and blackbirds worlds. Layers upon layers of impressions of birds singing the instant, who keep doing so while you write, when you read and revise what you had written with your window open – just right this past moment, a blackbird flew away with a characteristic alarm call and, soon after, the other local birds resumed their sung dialogues.

> [late at night, walking back home, several *madrugadas*]
> the bird sings from the top of the cypress tree,
> sings a phrase, silence, sings again
> nobody around, no more sounds in the streets,
> just the bird, me, and the night.

When singing, a male blackbird will typically chant an uninterrupted phrase, lasting a few seconds. A silent pause will follow, during which he will listen to the response by other blackbirds. Then, he will answer with another sung sentence, at times repeating part of what he has just heard if it is a shared, local theme. He will pause and wait for an answer, sing again, pause again, and keep doing it for a while. There are certain common features regarding the structure of blackbird songs. They usually have two parts. First, the melodious whistle, followed by the sizzling and swift twitter (Rasmussen, Dabelsteen 2002, 65-6). Nonetheless, there are lots of nuances and variations. Some are related to the intensity and vehemence of each blackbird's performance, at a given moment. At different times of day, a certain blackbird can be either singing with all he has, full volume, burning his two syrinxes. Or, instead, only in passing, barely humming in an absent-minded manner. Even doing it for himself, perhaps just as a rehearsal, so low that it is almost impossible for anyone to hear it – which makes it all the more special to be able to listen to it, to wonder if you are hearing anything, or solely imagining it.

On the other hand, the repertoire – the chosen combinations of one or more whistles with one or more twitters in a sung phrase, and the ensemble of all those phrases – differs for each individual blackbird. Some of the themes and segments are distinct, and identify one blackbird, while some are shared with other neighbouring blackbirds (72-4). All derive from the bird's learning process, that merges the aural bits he has either composed or listened to and selected from the songs of other blackbirds or from the surrounding soundscape. Sounds he chooses, learns, remembers, and practices; combines and performs; repeats, and transmits as culture, in song form (Hall-Craggs 1962). In the case of certain blackbirds, some of these sounds are recognisable, to human ears, as mimicries; fragments that the blackbird in question has taken from what he hears around him (Hall-Craggs 1962, 293-4; Hindmarsh 1984, 318). Often, these are the songs and calls of other birds living in that environment. But the blackbird might incorporate into his sentences the imitations of other sounds, some of them of direct or indirect human origin, and combine them with other fragments. And, since blackbirds are open-ended learners – meaning they can modify

the structure and profile of their sung sentences throughout their whole life – they keep adding to their songs, accumulating novel sounds and variations (Hultsch, Todt 2004; Hesler, Mundry, Dabelsteen 2012).

If previously, within my own human constraints and influences, I attempted to convey an episodical, fragmented version of the aural and lively worlds of the blackbirds who constantly and continuously sing and call around me while I write, listen, and think, it can be argued that blackbird songs contain and relentlessly communicate their own blackbird perspective and account, even history, on the soundscape and context in which they live (Cortés Zulueta 2021b). After all, they choose some aural fragments among what is available for them to hear, and they combine, repeat and modify those bits within the framework of their songs, and according to their preferences and needs. Thus, providing their own rendition of their surroundings through what they collect and then repeat, and emphasise via their reiterated singing.

Since some blackbirds include humans and human sounds in their songs, we can presume that, in their own way, they are listening to us – this, they can hardly avoid –, and that they are archiving us together with other bits of the surrounding soundscape. Then to sing and to narrate us, among many other things and without necessarily giving us priority. Because of this, I believe we can assume that these birds have their own account of the place they inhabit, where some humans happen to live. So, in one way or another, they end up incorporating humans and human related sounds into their songs. We can only speculate about why they pick those sounds, or any sound, from among the ones present in their milieus. Whether this is due to aural appearances and qualities – favouring certain pitches, paces, timbres, or sonic inflections –, or whether there are memories, thoughts, emotions, associated to the source of a sound – be it a neighbouring bird, a particular individual of its species, or anything human-related – or to the moments when they were heard, and chosen. Moments, sources, individuals, memories that might be revived, afterwards, with each song, with each repetition.

Even if we are not able to assure anything about what blackbirds, or one blackbird thinks or feels regarding humans and human affairs, there is the choice to listen to how humans are conveyed, in a certain time and place, by a bird, by a non-human being, as part of his songs. A bird who has listened, selected, learned, remembered, practiced, repeated, combined, composed and, above all, sang those sounds. While we listen to those songs, to the anthropogenic fragments they comprise and to the episodic perspective that has been returned to us, we can reflect on how we sound, on how we are listened to and perceived by others. And through it we can reassess both how we perceive ourselves and how we perceive the soundscape and environment around us, that we enormously constrain.

For instance, there is the local blackbird, *mi mirlo*, whose comings and goings I described before, and who I knew, listened to often and recorded occasionally since that first time I was fooled by his imitation of a great tit (Cortés Zulueta 2019, 35-6; 2021b). During a sunset at the beginning of the 2021 breeding season and with pandemic restrictions still translating into lower levels of anthropogenic noise, we recorded him for a few minutes.[7] It

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[7] It was possible to record him because I had noticed that he would perch on a cable at a particular time, sing from there briefly and be done for the day, since the season was only starting.

was a striking burst of singing, several whistles, twitters and what seemed isolated sounds strung together, without the customary pauses, which is something I associate with rehearsals or with blackbirds figuring out that year's songs, usually during late winter or early spring.[8] Shortly after, he hushed and flew away.

When I listened carefully to that recording, and to the other ones that followed that same season, I realised that this blackbird sang more mimicries than I expected. Inside his twitters – the second half of his songs –, I found imitations of the songs and calls of many birds, besides those of a great tit that had caught my attention initially: the tweets of house sparrows, the melodious chirps of greenfinches and goldfinches, the honed warble of European robins, a peep from a white wagtail, the chirrup of a passing barn swallow, the ascending cry of a kestrel, even the coda flourish of a nightingale, closing a couple of the blackbird's sung phrases. All of them, aural bits coming from birds that I recognised from the area.

The hybrid, dislocated nature of the place – an urban satellite of a coastal village made up of holiday apartment buildings, and their evergreen gardens growing along the seaside promenade, superseded by plastic greenhouses and tropical crops set on much more arid extensions of Mediterranean scrubs as soon as you walk a few tens of metres inland – is echoed, portrayed by the mimicries chosen, learned and sung by this blackbird.[9] There is the squawk of a seagull and what seem to be samples of the high-pitched singing of a crested lark, found in the open, earthy fields nearby. The blackbird also performs a rendition of the growl of one of the roaming stray cats, a regular occurrence around here, or the shrieks of the ubiquitous monk parakeets, an introduced species, originally from South America, whose calls indirectly point towards humans, and to human-caused imbalances of ecosystems.

In that first sunset recording, among many other mimicries, there is the interrupted crowing of a rooster, a contrasting rural feature from the crop area inland, once again linked to human activities. In fact, a short walk takes you through fields, white plastic greenhouses, *cortijos* and the paths trodden daily by a herd of goats, a shepherd and his dogs. But, in line with the mixed character of the place, not all the human imitations by this blackbird are so idyllic. Other ones could be associated with later steps in the evolution of the soundscapes produced and defined by humans, as categorised by Murray Schafer ([1977] 1994). Consider the creaking of metallic friction, as coming from the rusty hinges of a gate that the blackbird uttered at times, back and forth.[10] I tried to look for the specific source of that sound for some time, even waiting for the moment when garbage trucks lifted and emptied waste containers – perhaps, I thought, it was the friction of their articulated arms, or of the containers themselves – without success. Afterwards, it got me thinking that it might not be a particular noise, but a sonic bit inspired by the metallic scratching that accompanies the operation of machines that has been punctuating many human soundscapes since

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As registered in the recording, these bursts are frequently preceded by distinctive tweets (Cortés Zulueta 2021c).

8   On how blackbird songs mature along a season, see Hall-Craggs 1962. One time, I think I heard a blackbird repeating again and again a mimicry from a roof, then changing to another sound, as if practising outside the frame of a song.

9   For an attempt to convey the blackbird's account as a tale, see Cortés Zulueta 2021a.

10   Cortés Zulueta 2021c, 2′45″.

the Industrial Revolution (71-3). Here, as iterated through a cover version by a bird that reflects a massive change in terms of the soundscape, as imposed by humans on other animals centuries ago, with considerable persistence even today.

A peculiar instance of this would be the screeching of car brakes that the blackbird sings. He surely has heard this as a consequence of the nearby roundabout and the traffic hustle from the main road that connects the urban centres along the coastline. Again, yet another example of the impact of anthropogenic noise in the area. But that would not be the only case caused by cars, or maybe more accurately, by engines. Since the blackbird also sings and mimics some kind of motor: at times roaring a vrroom-like onomatopoeia just once; others, twice or thrice (2′16″) (Cortés Zulueta 2021c). A couple of this blackbird's favourite perching and singing spots – the apex of a gable roof eave, and a tall lamppost – were above the tent of a small car workshop where, on occasion, the engines of cars and motorcycles are tested through sequences of various accelerations. The noteworthy detail about this is that the blackbird did pick up and replicate the acceleration cadence, the rhythm that you would expect by someone starting an engine – *vrrroom, vroom vroom* –, a first emphatic push followed by two additional ones. If you think about it, humans may learn to do this for several reasons, and perhaps it is easier to notice when you hear it through the voice of a blackbird, who has summarised how humans sound like at times just as well as how a robin, or a kestrel does (2′55″).

The preceding mimicries, with their metallic frictions and humming engines, could be framed within what Murray Schafer (1994, 69-87) identifies as the first phase of the post-industrial soundscape, emerged after the Industrial Revolution and characterised by a general aural impoverishment. The next step, which accelerates this loss, is what he names the Electric Revolution, with its disrupting, distracting and attention-grabbing schizophonic pings, rings and buzzes, during which the original source of the sounds had been separated from where they were reproduced and heard, like on the radio (88-99). Not in vain, the blackbird repeats and returns to us a blaring alarm – probably a car's, but it may be a house's, or a siren (2′11″). This is a consequence of how annoyingly and frequently cars, houses, garages, businesses, or even a faulty ATM – wording a police warning – proclaim and denounce supposed risks to someone's property (which rarely materialise, at least here), via the connections, disconnections or malfunctions of various electrical systems. On the one hand, it is a contrast with avian alarm calls, issued in the proximity of humans or when an endangering kestrel flies over. On the other hand, many major situations contributing to urgent threats, such as the ecological and climate crisis, go much more unnoticed and, perhaps unfortunately, are not accompanied by that kind of audible warnings.

At last, the blackbird's repertoire of anthropogenic aural fragments is rounded off by the ringtone of a mobile phone, distinct because of its liquid, crystalline quality, with pristine, reverberating notes cascading up and down, the final and closing touch a discordant one, lower and sharper, as if urging you to take the call. For a while, I kept searching for the original source, the specific sound that the blackbird would have heard, and imitated. After ruling out ringtone after ringtone, I began to think that such a source might not exist. The bird could have learned and mimicked it, and modified it later on, as blackbirds do sometimes. Or perhaps, just as he picked up the cadence of an engine being accelerated, he got inspired by a

particular trend of ringtones, and was able to capture the essence of those that tinkle and echo, up and down and back of a certain scale in a circular fashion, that we recognise as mobile ringtone-like. Similarly, other segments of this blackbird's song are marked by regular *beep beep beep beeps*, or by squishes, *weeeees*, *fiu fius*, *wiggy wiggies*, peeps and buzzes reminiscent of the mixture of digital, electronic sounds, alerts and notifications with ludic overtones but far more negative connotations that nowadays hijack and disrupt our attention and populate our daily soundscape, invading and shaping the soundscapes of others, as this blackbird kept reminding us.

Therefore, this blackbird registered the acceleration of the digital and electronic soundscape, and overall pace, which defines our era and was anticipated by Murray Schafer (1994, 96). Through other fragments and, in a way, superposing different layers of human aural history, the blackbird also sings metallic bumps and frictions, engine roars and brake screeches, all derived from the combustion of fossil fuels and the machinistic turn brought by the Industrial Revolution. In his sung phrases, he includes sonic elements that betray the hybrid and disjointed nature of the place, that add rural touches to the noise of traffic of this coastal city, like the crow of a rooster (2'43"), which has accompanied humans for millennia. And then all those other mimicked bird calls and songs, great tits, house sparrows, greenfinches, goldfinches, European robins, white wagtails, barn swallows, nightingales, crested larks, kestrels, with a seagull pointing to the proximity of the Mediterranean, and a cat again proclaiming human presence. Or monk parakeets, as introduced by humans – a symptom of the grave distortions and imbalances we are causing to ecosystems.

All of the above makes it possible for humans to listen to themselves as conveyed by a bird, by other voice, by other being, which gives us an account of our aural history as manifested in that specific place; on how we are listened to and perceived by others, a perspective that can enrich and enlighten our thinking. Although the blackbird, the blackbirds, chant much more than human sounds and mimicries. Since we are but just one of the sources of the fragments that they incorporate into their songs. In the end, when blackbirds respond to each other in their sung dialogues, through their shared and evolving local themes shaped by the composing and listening of males and females, they are giving form to their own traditions, to their own culture, to their own more-than-human aural history.

[sun heat blue sky dry scrub]
a blackbird
on a fence, by an olive tree, near a cabin
(none of them exist no more)
is he singing?
(so close, but his chirps are less than a whisper)
or I am dreaming it?

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With the Wild
Artmaking as Collaboration with Wild Landscapes and Their Inhabitants

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Abstract   This essay explores the intersection of art, nature, and culture, delving into the role of the artist as an agent who interacts and collaboratively creates with their surrounding ecosystem. The essay draws from examples like Pintubi song maps in Australia, the coastal pilgrimages of Jakarta-based duo Tita Salina and Irwan Ahmett, and Rashad Salim's *Ark for Iraq* project. Through these examples, it discusses how artistic practices can emerge from dialogues with landscapes and communities, and how such practices can evoke new mythologies and worldviews. The text reflects on the blending of human agency with the elements of the environment, bringing forth a perspective of plural realities and decentralised designs, challenging anthropocentrism, and emphasising the inherent agency within these artforms that reciprocate and resonate with their ecosystems.

Keywords   Vernacular design. Pluriversal ontologies. Ecosystems. Ecological art practices.

Summary   1 Mirrors to a Living Planet. – 2 Weaving and Feeling: Locating Ourselves in a Limitless Cosmos. – 3 Being Pilgrims: Measuring the Landscape with Bodies, Steps and Words. – 4 Departing from the Coast: Our Agency Stems from the Ecosystem. – 5 Conclusion.

1 Mirrors to a Living Planet

Humans have been making art for a long, long time. A group of archeologists recently retrieved what is currently thought to be the oldest figurative painting ever discovered, dating to roughly 45,500 years ago: three little hairy pigs, painted on the limestone walls of a cave on the island of Sulawesi, Indonesia (Brumm et al. 2021). Before that, only non-figurative forms of expression existed, even though it is debated whether those examples could be defined as artistic endeavours (McDermott 2021).

What is sure is that such primordial examples of human expression were inspired, sustained and produced in dialogue with the ecosystem: starting

from the physical materials, such as the Neanderthalian bone etchings, to the marvel evoked by the world around them, interiorising it and then producing an artistic output. This is close to what Henry Miller describes as a very important element for writing: the ability for humans to leave their own self, to come back in it enriched by a dialogue with the world.

> I stood before a mirror and said fearfully: "I want to see how I look in the mirror with my eyes closed."
> These words of Richter's, when I first came upon them, made an indescribable commotion in me. As did the following, which seems almost like a corollary of the above – from Novalis:
> *"The seat of the soul is where inner world and outer world touch each other. For nobody knows himself, if he is only himself and not also another one at the same time"*. (Miller 2004, 111)

Even though tens of thousands of years have passed, and the forms of art are widely different – from cave painting to modern writing – there seems to be a common thread between those early humans carving images in limestone and bones and the modern writers pondering on the limitedness of our human selves. What is the root of artmaking, if not the relationship between artists and the broader cosmos that surrounds them? If in one case it can be the relationship with others, at a more primordial level it can be considered a collaboration between an artmaker and wilderness itself.

Among various examples of collaboration between human and non-human artists through art history, it is interesting to look at the recent work of Aki Inomata, who undertook a extensive artistic research process to blend her own artistic agency with that of different animals. For example *How to Carve a Sculpture*,[1] developed in collaboration with beavers who materially make the sculptures from pieces of wood gifted by the artist **[figs 1-2]**. The beaver is an artist: it makes the archetype, then a human sculptor realises a replica on a larger scale.

Inomatas's approach represents an act of sharing artistic agency, and in doing so it goes beyond other more historically established works such as Joseph Beuys' *I Like America and America Likes Me* (1974) or Richard Serra's *Animal Habitats Live and Stuffed* (1966), where the animals were treated more as objects than subjects: valued on the basis of their relationship with humans rather than as autonomous beings equipped with their own agency and worldmaking capacity.

Inomata's practice seems to be answering a different set of values, in which humans are not masters of nature but instead inhabitants on par with other life forms. As such, the world's space is shared and not there to be grabbed, its rules written in a more-than-human language. This sharing of space and communication is similar to what Gary Snyder tells about the indigenous Ainu population of Japan, who see the wild spaces as *iworu*: fields where certain animals grow and live, getting closer to human spaces only occasionally. Around the village are different *iworu*, mainly that of the Bear (the mountains) and of the Orca (the waterways and sea), from which come two of the most important animals and food sources: the deer and the

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1 Aki Inomata, *How to Carve a Sculpture*. 2018-ongoing. More information at `https://www.aki-inomata.com/works/how_to_make/`.

Figure 1   Aki Inomata, A beaver carving a sculpture, working at nighttime as artists famously do. © Aki Inomata, production assistance: Nasu Animal Kingdom. Courtesy of the artist

Figure 2   Aki Inomata, *How to Carve a Sculpture*. Installation form at Mori Art Museum, part of *Roppongi Crossing 2022. Coming & Going*, curated by Amano, T. et al. Photo: Eisuke Asaoka. Courtesy of the artist

salmon. When these animals approach human spaces, they are referred to as *marapto* (visitors or guests). As such, after the hunting and before the feast, the animals are honoured and sang to. Hunting and fishing activities are not practised in remote areas, as they are sacred spaces. Through these rituals, the spirit of the *marapto* is delighted and, as Gary Snyder tells:

Having enjoyed their visit they return to the deep sea or the inner mountains and report "We had a wonderful time with the human beings". Thus if the humans do not neglect proper hospitality – music and manners – when entertaining their deer or salmon or wild plant *marapto*, the

beings will be reborn and return over and over. This is a sort of spiritu-al game management. (Snyder 2020, 94)

In this tradition we do not only see the agency of animals, but also how per-ceiving a living ecosystem – a living planet even – inspired songs and tales, rituals and worldviews in response to it, rather than in a man-led effort to give meaning to it.

2 Weaving and Feeling: Locating Ourselves in a Limitless Cosmos

Within an array of sign systems which translate the world into human shapes, maps are an obvious one – with a graphic sign that shares many aspects with artistic practice. Particularly, we think of a bird's eye view of the land. By today, used as we are to maps orienting our daily crossings, perceiving ourselves as moving points in a vertical view is so easy that it seems as an extension of human nature. And yet, it is only one of many ways to translate the world and trace places and distances.

Take the Ocean for example: with its incommensurable extension, it has long been perceived as impossible to map and therefore partition. Grotius, an influential Dutch thinker from the sixteenth century, used this quality of the Ocean to argue in favour of his Mare Liberum idea: trying to justify the Dutch interests in areas very far from their national borders, the East Indies, he argues that "wine is possessed by means of a vessel, [and] rivers by means on their banks" but the sea instead was (and is) "an unlimited liq-uid [that] is not to be possessed" (Grotius 2012, 108). Such words sparked an immense debate at the time, specifically with the competing British Em-pire and its intellectuals, who argued that the sea was indeed quantifiable by technological means – specifically the compass. As Scottish jurist Wil-liam Welwod said:

> God hath diversely informed men by the helps of the compass, counting of courses, sounding, and other ways to find forth and to design *finitum in infinito*. (Welwod 2012, 71)

This argument shows clearly how since the very early stages of modernity, and stretching back to ancestral times, the perception of space is strictly connected with time and inherently *relational*: the position of a human in relation to the world. Four centuries later, Carl Schmitt noted how the com-pass created a shift in human perception, as it brought

> the most distant terrains of all the oceans […] into contact with one an-other, so that the globe expands. (Schmitt 2015, 23)

But according to scholar Renisa Mawani, who brilliantly interprets this cen-turies-long debate, even Schmitt forgot a key element: the chronometer, or clock, allowing humans to keep track of the passing time:

> It was the clock and not the compass that offered greater precision in naval measurement, thus rendering the sea to be progressively less ele-mental and increasingly spatial and temporal. Through the precision of

the chronometer, longitude could be determined with greater accuracy, the Earth could be mapped with reliability, and East/West became seemingly objective coordinates that naturalised geographical, temporal, and civilizational orders. (Mawani 2020, 55)

A technological invention that shaped a standardised view of the world, increasingly human-centric and independent from the wilderness and the rules of nature.

Different worldviews and tools, constantly influencing one another, thus correspond to different ways of locating our bodies in the world, and therefore of moving towards faraway places. This translates into art and culture, and especially in the way humans make maps. This became very evident in the Pacific Ocean, when Captain James Cook travelled the yet unmapped archipelagos of Polynesia and Micronesia all the way to Aotearoa/New Zealand. In order to orientate themselves in this "Sea of Islands", as Epeli Hau'Ofa (1994) defined it, the crew of the *HMS Endeavor* befriended Tupaia: a legendary Polynesian navigator who allegedly sought allegiance with the British to avenge the invasion of his native island, Ra'iatea, by the warriors of Bora Bora. Tupaia, a man of fine intelligence, rare navigational talent and artistic skills, drew a map in 1769 that still raises questions among scholars **[fig. 3]**.

The unique characteristic of Tupaia's map is that it seems to blend traditional Polynesian knowledge with British mapping customs: a way of translating his own cultural perception of these enormous oceanic distances. Albeit the truth behind this map is still debated among scholars, a fascinating reading has been developed by Lars Eckstein and Anja Schwartz (Eckstein, Schwarz 2019), who explain that

for Cook, a chart was a bird's-eye view of the curved world stretched onto a two-dimensional plane. Tupaia instead took a canoe's-eye view, a perspective that shifts depending on where you start from. While Europeans usually fixed North at the top of the page, Tupaia may have placed it in the centre. (Gelling 2021)

This would have been done by placing the word *E Avatea* ("the noon") at the centre of the map, giving a clue on how to orient it. Through this system, Tupaia translated his own way of orienting the ship to something understandable by Cook and his crew, who everyday gathered right before noon to determine the ship's latitude and calibrate the clock and compass readings. Usually, Polynesian navigators like Tupaia used a wide array of elements to position themselves: the sun, of course, but also the moon and stars, cloud formations, winds, currents and swell patterns. To the British expedition, the North was the main cardinal point, therefore he translated it with the typical position of the sun at noon in the Southern hemisphere.

From this story we understand how the Ocean inhabitants met by the British and Dutch explorers perceived their watery world in a different way, and therefore translated it into different cultures, structures, and maps. A compelling example of this method can be found in Marshallese stick charts, in which sticks and shells are used to represent the journey routes departing from each of the islands to the surrounding ones, following and interacting with ocean swells and their relationship with the islands and the seafloor. These beautiful objects are unreadable for those who do not adopt
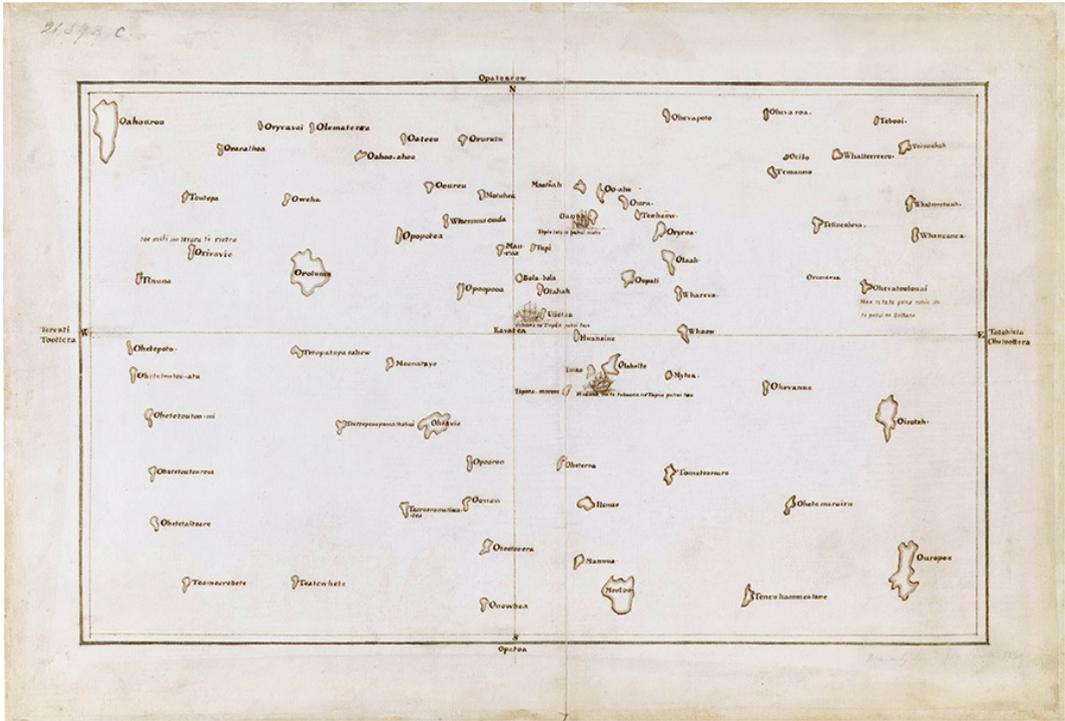
Figure 3 Tupaia's map, indicating more than 70 Pacific islands with names accessible to the British sailors. Credit: Tupaia / Public domain

the Marshallese worldview, but they become functional wayfinders for the islands' navigators (Ascher 1995).

Grasping this relational and metaphorical meaning of the stick charts, Brazilian artist Renata Pelegrini recently developed a series called *MAPPA* (2022-ongoing) in which she interprets Pacific traditional knowledge and draws inspiration from it.[2] In her works she interweaves orchid branches from her garden, creating objects that look very much like stick charts, whose purpose, however, is not that of locating a place around the world. Instead, she uses common gardening green twine to direct the growth of the flowers in commercial flower shops as the shells that locate islands in the original charts, and leaves the tips of the branches – the aerial roots – open ended, pointing at multiple directions. Through her work, the artist wants to invite the public to think about its embeddedness in nature, locating themselves within, or in relation to, a point in the chart. Orchids, Pelegrini explains, are epiphyte plants: they can grow even without soil or pots, living together with other organisms, and this metaphor can be useful for humans too. By using the not commonly praised parts of orchids, and re-purposing the plastic knots to direct their growth in a human-pleasing way, these charts talk about embodying the innate knowledge of such social plants, listening to the ecosystem just as the Pacific master navigators who are able to listen to deep ocean swells by lying on the bottom of the canoe.

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2   The following content was gathered during a conversation between the Author and the artists.

The act of weaving further recalls that of meeting, in the case of the stick charts it is through a line, while in more circular designs it can be that of a hug, or of holding hands. In another recent series, Pelegrini engages with the coastal tradition of women communities in the Northeast of Brazil, where it is common for men to work at sea (mainly in shipping and fishing) while women remain on the shore. Here, in the case of particularly long trips, women developed a number of songs that are sung while holding hands – in a game similar to *Ring-a-Ring o'Roses* – usually by the moonlight. In Portuguese, this playful ritual is called *ciranda*, and this inspired a series of 'singing' sculptures where moulded copies of found items make noises when they are put in motion, mimicking the looping movement of the singing women. This work, also connected to the act of weaving, reminds the audience of the role of singing and storytelling in maintaining the connections created throughout geographies, but also of the role of time in perceiving space and travel – in this case waiting for journeymen to return **[figs 4-5]**.

3 Being Pilgrims: Measuring the Landscape with Bodies, Steps and Words

If stick charts were a particularly poetic way to trace the relationship between humans, canoes and the Ocean, there are countless means to translate the landscape into forms intelligible to humans, many of which are rich with metaphors. While conceptualising a map, a functional strategy is to realise it in a way that fits the means of transportation and the timescale needed to cover a certain path. After all, there are different maps for cars and aeroplanes, for boat journeys and hikes.

In his voyages through Australia, Gary Snyder encountered one interesting example of engaging with space and time through voices, a surprising mapping methodology through storytelling and singing in the Pitjantjara and Pintubi lands around Alice Springs, Central Australia. Here, venturing with the aboriginal community, Snyder covers a stretch of desert by truck with Pintubi elder Jimmy Tjungurrayi. During the trip, the elder starts to speak very rapidly, seemingly out of nowhere, telling a story of mischief, wallabies and lizard girls set in the mountain territory that they were passing by. The story is incomprehensible, mainly because of the extremely fast pace. Immediately after finishing, another story about the following hill follows, again impossible to keep up with.

Later on, Snyder gets to the reason behind this:

> I realized [...] that these were tales to be told while *walking*, and that I was experiencing a speeded-up version of what might be leisurely told over several days of foot travel. (Snyder 2020, 88)

A form of oral lore that also functioned as a map to place yourselves in a landscape, traditionally inherited from elders who guided foot expeditions to younger members of the group, often travelling nightlong and napping in the acacia shade during the day. Through these oral maps, Pintubis pass on traditional knowledge, legends, and practical information simultaneously, revealing for example a convenient place to set camp or the proximity of a waterhole that survives even through drought years. Trying to explain this

Figure 4   Renata Pelegrini, *MAPPA – And a New Grammar.* 2022. Courtesy of the artist

Figure 5   Renata Pelegrini, detail of a *Ciranda*. 2022. Courtesy of the artist

custom, Jimmy and other elders sang throughout the night, explaining that there's so many songs that they need to be constantly rehearsing:

> Each night they'd start the evening saying, "what will we sing?" and get a reply like "let's sing the walk up to Darwin". (89)

Such singing maps blend culture and cartography, art and landscape observation: more than being songs and tales about specific places, they are human expressions that emerge from a dialogue with these landscapes, their qualities and inhabitants – humans or otherwise.

Of course, this approach strongly resonates with the practice of many contemporary artists who strived to blend their agency with that of a
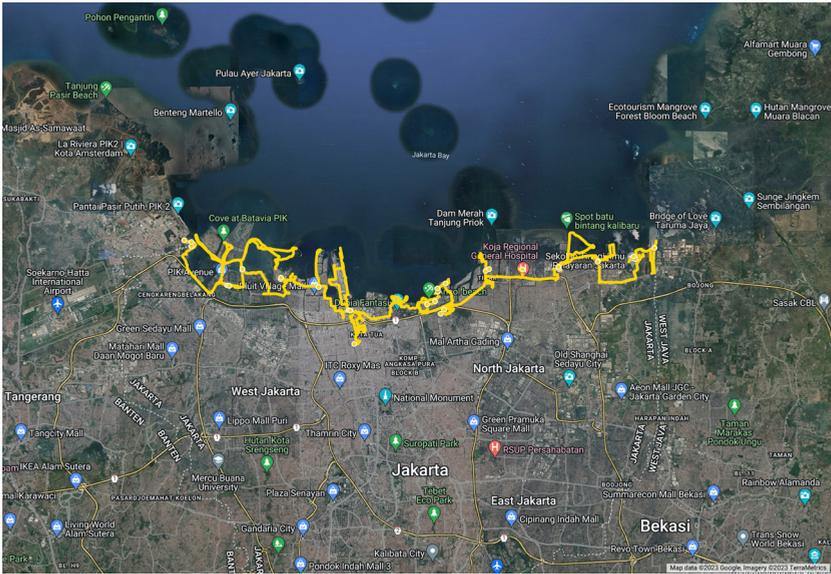
Figure 6 Tita Salina, Irwan Ahmett, Map for *Ziarah Utara*. 2023. This image and the following ones (7-11) were taken during the various editions of *Ziarah Utara* and shared with the Author to accompany the essay. All are courtesy of the artists

chosen landscape, predominantly the land art movement. One example is Nancy Holt's video *Swamp*, in which Holt advances in a wetland area filming through her Bolex camera, her sight confined by the viewfinder, while her partner (and artist in his own right) Robert Smithson vocally guides her steps.[3] In this action, the swamp's agency comes out prominently, interacting with Holt as much as Smithson does through his voice. The feeling of being in an unusual environment, precarious and in constant evolution gets through the artist's uncertain steps and carries the spectator in a swampy embrace.

Another example that immediately comes to mind is that of the walking artists – Richard Long and Hamish Fulton among many others – who made walking more than a means of transportation, or even a research methodology, but the very centre of their practice. Using maps, photography, muds and other found materials to translate their artwork in exhibition spaces, these artists have made it clear what the audience can see is only a testimony of the real work, which is invisible to anyone but the artists and their occasional companions: it is the walk itself and the secret dialogue with the landscape surrounding them.

Among countless artworks influenced by land and walking artists, of particular interest is a unique practice initiated in 2018 by Jakarta-based duo Tita Salina and Irwan Ahmett, who under the title of *Ziarah Utara* ("Pilgrimage to the North") started a yearly coastal pilgrimage crossing the Indonesian megalopolis – home to almost 35 million people – from the urbanised South to the wilder North **[fig. 6]**. This pilgrimage takes more or less

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3   Nancy Holt, *Swamp.* 1971. Video on 16 mm film, colour, sound, 6′00″.

two weeks of walking, stopping and encountering wildly diverse realities. It constitutes a platform for collaboration with other artists, researchers and communities, but above all a research methodology and a collaboration with the surrounding biosphere: a practice of working with elements such as the wind and the sea, the coal and the salt.

The North of Jakarta, the artists tell,[4] is where the contradictions that lie as the foundations of the city are more visible: it is an area of estuaries and wetlands, broadly reclaimed to make space for development, where fishing cultures still persist and clash with luxury real estate projects, gated communities and the planned Garuda Seawall – a gigantic infrastructure that, if realised, should separate Jakarta from the sea with a 32 km stretch of dikes that would also host further infrastructures and residential areas **[fig. 7]**. The Garuda is a mythical creature – an enormous eagle that also is Indonesia's national symbol – and mysticism plays a key role in the acceptance of the project and the disruption of local communities' lives. For example, precisely because they are built on reclaimed wetland and sea areas, the luxury real estate units here are very impractical: their ground floor often floods, they need to be gated and are hard to reach and move around from. The reason why they are so appealing to the regional elite is very rooted in the belief that here lies 'the head of the dragon': it anticipates fortune – your ground floor might flood each season, but that means that business will flow! **[fig. 8]**.

Here mysticism and materialism go hand in hand, while political strategies adapt to that: the problem of Jakarta's subsidence has been mitigated

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4 All the following material comes from an interview with Tita Salina and Irwan Ahmett, held online on the 17 May 2023, and has been reviewed with them. More information on the work can be found on various online sources, among which the website `https://ziarahutara.hot-glue.me`.

Figure 8   Tita Salina and Irwan Ahmett comment this image as "a rotten security post container on a decaying reclaimed island"

Figure 9   Tita Salina and Irwan Ahmett comment this image as "the pilgrims who perhaps seek for their human values by looking for suffering"

in the last decade, but its rhetoric works well to attract climate adaptation funding. The famous sinking mosque of Wal Adhuna, also in the way of the pilgrimage, works as a symbol: the constant performativity of its dialogue with the tide reinforces the claim for funding, just as a work of public art that needs to be maintained always in its precarious state **[fig. 9]**.

Ahmett and Salina perform their yearly pilgrimage to these areas, witnessing their inherent dynamic nature and refreshing the inspiration that comes from visiting the coastline, learning with the mangroves and the

green mussels, and dialoguing with the communities that live such developments on their skin. These marginalised groups often live in precarious settlements (*kampung* in Indonesian), the majority of which are informal, bearing no right on paper. They are thus easy to displace to make space for new development, but recently some of them are obtaining legal documents and began unionising, using their cemented solidarity to demand the rights to survive and manage their surroundings. There is no such thing as a nature without humans, as there are no humans without nature. The connection between these elements here is very strong and can be felt through the body: the flesh and bones and brains and hearts of the artists (and their companions) become instruments to feel their surroundings. A "*telemetric* body"[5] that allows a different kind of research and knowledge – neither scientific nor humanistic, innate and therefore hard to translate into data or words.

This kind of knowledge emerges from a dialogue with the ecosystem at large, including its more-than-human inhabitants. Recently Salina and Ahmett have met a family who holds Wati in precarious conditions: a female pig-tailed macaque, most likely from the mountainous island of Borneo or Sumatra. They have made their mission to free her, and the strategy that worked was not the rational one – which was to point out the legal issues with it – but an oniric one: Ahmett said to have had a dream in which the macaque was speaking to him while biting her own hands. This convinced the family to let him take the macaque with him **[fig. 10]**.

These stories, among others, arise from the act of immersing in the landscape, and can be very much considered new mythologies that tell about the relationship between humans and the landscape, just as the Pintubi maps mentioned above. They are shaped by the dialogue between the artists, their collaborators, and the ecosystem itself. Along the pilgrimages, the thousand faces of Jakarta are visible: from the archipelago of the 'thousand islands' (actually they are about 110, some of which will disappear soon, either victims of sand and coral extraction, airport expansion, real estate development, or swallowed by the sea) to the constellation of abandoned 'haunted' infrastructures scattered in remote corners of the city, where often ghostly messages from the past or the future can be found by pilgrims **[fig. 11]**. Only by observing and feeling it from multiple angles, at different times, this can be grasped, because the coastline never says the same thing twice.

"It's our labour of love", the artists say. Love for the sea and the coasts, that follows the pure feeling of awe of being immersed in it.

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5   The term has been coined by Soh Kay Min, Research Associate for NTU Centre for Contemporary Art in Singapore, who has been involved with Ziarah Utara through an interview and a visit to two *kampungs* in the northern coast of Jakarta.

Figure 10   Tita Salina and Irwan Ahmett comment this image as "apig-tailed macaque on the chain looks irritated amidst the high tide being soothed by a boy who was deprived of the things he deserves at his age"

Figure 11   Tita Salina and Irwan Ahmett comment this image as "no turtles lay eggs on sinking Talak Island, Thousand Islands archipelago, anymore"

**4   Departing from the Coast: Our Agency Stems
        from the Ecosystem**

Following this logic, we can see how mythologies themselves emerge from the ecosystems where they are first crafted, adopting topics and characteristics that come from the natural world. One example is in the Epic of Gilgamesh, which inspired the judeo-christian myth of the Great Flood and Noah's Ark.

Gilgamesh – archetypal hero of Mesopotamia – meets Utnapishtim: a character who was made aware of an incoming apocalyptic flood that would punish humanity for their excessive noise and activity. The bringer of the message was the god Ea who – taking pity in humanity – advises the reed houses to turn into boats.[6] This comes directly from the specific vernacular architecture (materials, cultures and skills) used in the Fertile Crescent, in turn designed as such because of the wide local availability of certain plants and materials just as in ancient Anatolia, Italy and elsewhere: an alphabet of making that is universal throughout hominid cultures and stems from the material qualities of ecosystems and ecologies.

Taking inspiration by this recent knowledge, that shifted understandings and worldviews, and by a process of expeditionary engagement that developed into an ongoing commitment with local communities and marshes as part of a larger body, Iraqi artist Rashad Salim started in 2018[7] with Safina Projects the long-term initiative *Ark for Iraq*, that has evolved in many directions among which *Ark Re-imagined*, Iraqi pavilion at the Venice Architecture Biennale in 2021.[8]

The project aims to study boatmaking traditions, some of which are on the verge of being forgotten or even lost and recreated, broadly realised with the use of endemic plants and available material such as the reed that grows on the banks of the great rivers or easily accessible bitumen – the earliest example of hydrocarbon culture that fuelled waterproofing, mobility and trade. These techniques survived kingdoms and empires through the ages, but are now almost forgotten because of the arrival of colonial techniques disregarding locally available materials, thus generating a shift that severed the connection with the surrounding ecosystem. Greatly affected by the metalification, motorisation and dependence on oil (that replaced coal), the people living in the Fertile Crescent have been displaced by the war and suffered the isolation of Iraq, losing their engagement with the rivers, their wetlands and knowledge – both ancient and contemporary.

Through his long-term commitment to understand and use ancient boatmaking and architecture techniques that employ widely available local materials, the project has established a network of boating clubs along the river, starting from Babylon and sailing the riverine network inland to Basra, Baghdad and to the mountains. These clubs help people engaging with the rivers, and mirroring in other geographies such as Venice, Scandinavia,

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[6] The Epic of Gilgamesh (2000, 88), XI, ll. 20-7: "Princely Ea swore with them also, repeating their words to a fence made of reed: "O fence of reed! O wall of brick! [...] Demolish the house, and build a boat! Abandon wealth, and seek survival! Spurn property, save life! Take on board the boat all living things' seed!".

[7] The founding inspiration for this interest comes from the mythological expedition led by Thor Heyerdal on the Tigris in 1977 on a reed boat. For more information see Heyerdahl 1993.

[8] See https://arkforiraq.org/.
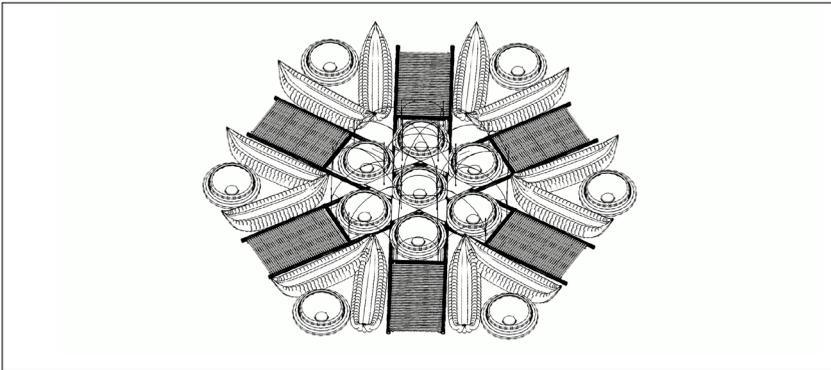
Figure 12 Rashad Salim with Abu Hyder in a Guffa (coracle) on the Tigris in Baghdad, 2013. Image courtesy of Ali Jewad al-Musafiri

Figure 13 Ark Re-imagined study (aerial view) by Khalid Ramzi and Rand al-Shakarchi. 2016. Copyright Safina Projects

reaching out and connecting similar agencies, trying to reconnect an intergenerational loss of local knowledge, rebuilding continuity **[figs 12-13]**.

This re-engagement and exploration of vernacular knowledge, that not only emerges from the ecosystem, manifesting itself materially, but also develops a reciprocal relationship between the region and its inhabitants, clashes with the idea of designs that should fit all and be adopted by any culture. Metal, for example, with its apparent superiority took over previous crafts with un-sentimental pragmatism that created removals. Recently, a number of theorists are developing the idea of a 'pluriverse', one where many worlds and worldviews coexist and that starkly refuses homogenisation and the reduction of diverse realities to a standardised one. This idea of a pluriversal world has been developed by thinkers such as Arturo Escobar (Escobar 2018), and Thomas Mercier (Mercier 2019), criticising the

Western tendency to apparently allow for diversity, but creating a general category of 'others' that denies their inherent complexity and creative power, ultimately crushing it and extracting its natural and human capital.

Among different thinkers, it is interesting here to consider Alfredo Gutierrez Borrero's idea of DESSOBONS ("DEsigns of the South, of the Souths, Others, by Other NameS"). It indicates designs that are more than alternatives – or 'others' – to standardised ideas: they go beyond being cultural objects and man-made inventions, they are invested with their own agency, they act in the world as symbols and metaphors projecting other things (Gutierrez Borrero 2021).

Through this lens, we see how the crafts and architectures developed within Salim's *Ark Project* are more than returning vernacular designs, and even more than the community processes that their envisioning and realisation sustained: they express the relationship with the surrounding biosphere, a vision of unity and specificity. For sure, these meanings embody history, communities and worldviews, but are not limited to such things. A boat is a boat, it needs to function as such, but it also becomes a richer metaphor that gives it power.

5   Conclusion

Projects and practices such as the ones described in this essay – developing in parallel with a growing momentum to include more-than-humans and even whole ecosystems in jurisdictions and policy-making[9] – empower art-making in a broader sense, to become a collaboration with the wilderness: the artist must acknowledge their unlimited nature, necessarily intersecting with that of other humans, cultures, animals, and ecologies. This takes not only a great humbleness and altruism, but a capability to perceive complexity. Once an artwork, with the process of its making, comes into the world it can embark on a life of its own, creating ties and effects independent from its maker's intentions.

It can be frightening, but it is what makes it alive and generates hope.

This means also refreshing an inevitably anthropocentric perspective coming from an inescapably human maker: the artist becomes an actor in dialogue with others, who maintains a relevant position and power, consciously blending with a broader dimension. It is a work made by humans, but becomes a bridge that reaffirms a connection with the wild.

The case studies analysed are but a small selection in a ever-growing array of similar practices, that testify not only an increased sensitivity by contemporary artists on topics of ecology and biocentrism, but also the ability of art to transcend its boundaries and create meaningful collaborations not only with other disciplines, but with entirely new realms of existence, specifically the more-than-human world.

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[9] See, for example, the recent UN declaration of a human right to a healthy environment, or the fast-growing movement for rights of nature. Among many sources, one example is Stilt 2021.

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Section 2
Landscapes of the Anthropocene

Enchanted Cutaway: Nurturing Imaginations Through Regrowth and Remembrance in the Altered Landscape of the Weald (UK)

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Artist and researcher

Abstract This study traces the impacts of an iron industry upon a woodland in the Weald (UK), called Cutaway Wood. It emphasises that the sixteenth century, which spanned the boom of the industry in the UK, also saw the greatest impacts of enclosure upon the landscape, the scientific revolution strip life down to its basic elements, and religious theory manifest notions of supernature. All of which created space for a burgeoning industrial capitalism to exploit natures resources. These capitalist abstractions haunt the present, forming a psychological hurdle as we try to visualise a new world. In this article I argue that rekindling a connection to land through visitation may help to reorient our diminished capacities for envisioning solutions to the climate crisis.

Keywords Woodland. Extraction. Imagining otherwise. Coppice. Visitation.

Summary 1 The Weald. – 2 Cutaway and the Long Sixteenth Century. – 3 A Haunting. – 4 A call to Visitation. – 5 Regrowth in Ruin. – Conclusion.

1 The Weald

It is hard to picture the scale of the iron industry in the Weald today as a large amount of the violence inflicted upon the landscape has healed, only expressing its scars when you know what to look for. However, due to the actions of an industry that was in full force by the sixteenth century, and which continued until the last furnace burnt out in 1813, vast quantities of iron were extracted from the area, shaping the landscape, the human history and the non-human ecosystem to this day. The Weald describes an area

of land which flows up from the coast at the South-eastern tip of England into Kent, West and East Sussex, Hampshire and Surrey. It was after nearly a year of monthly visits, from my home in south London to a woodland in Haywards Heath, situated within the Weald, that I began to notice the traces of industry that remain.

Centuries of capitalist abstraction has left many of us living without a psychic connection to land, which has in turn diminished our imaginative skillset with which to envision solutions to the climate crisis. I began a practice of monthly visits to the woods in an attempt at rekindling my own connection, and to focus on the woodland as a subject for my film practice. I chose to spend a year watching the seasons change, with the intention of slowing down and listening attentively, in an effort to form a relationship with an environment that was unfamiliar to me. I went in search of 'enchantment'. Peter Linebaugh wrote in his introduction to Silvia Federici's text *Re-Enchanting the World*, that for Federici enchantment refers, "not to the past but the future. It is part, perhaps the leading part, of the revolutionary project and inseparable from the Commons" (Federici 2019, XVII).

Noticing the ghosts of industry present in the woods, was one of the first signs that I was beginning to attune to the environment. Once I had identified the fingerprint of extraction amongst the irregular growth formations of the trees, the controlled trajectory of the rivers and the ferric oxide bubbling to the surface of the cratered woodland floor, I began to see it everywhere. Some of these traces would have informed early industrialists that the area would be profitable to mine, and others exist now as relics to what took place as a result.

2 Cutaway and the Long Sixteenth Century

My lived experience of place is London, the city where I spent my childhood and still reside today. In cities, our imaginative worlds are prescribed to us, whereas to step over the threshold and into the woods feels like stepping out of time. This is not to say that one location is *Nature* and the other not. To recognise the city as a place of human economic labour, is to understand that such labour cannot exist without the countryside. Cheap labour within the city has always been sustained by cheap food being produced in the countryside, and this relationship has its roots in enclosure.

The enclosure system in England removed access of the peasant population to the commons. Common lands consisted of both agricultural flat lands used for farming, and wooded areas that provided building material and fuel. Tending to common land was a community-based labour where the results were seen and enjoyed directly. Enclosure began in 1604, but it was not until 1750 that the Enclosure by Parliament Act became the norm. Concurrently the iron industry of the Weald boomed in the sixteenth century and thrived until production began to decline in 1770 when the promise of coal lured it elsewhere.

Although the whole of the woodland in Haywards Heath is ancient,[1] there is a discernible difference between plant life found in the higher drier

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[1] The term 'ancient' defines a woodland that has been consistently wooded since at least 1600 AD.

Figure 1   Cutaway wood (2021). The alder tree in the centre of the image has been coppiced. © Sam Risley

section, when compared to the lower swampier area. The lower section is called Cutaway Wood. Simon, one of the two brothers who own the woodland, showed me how alder trees had been coppiced within Cutaway. The reason for this was twofold; firstly, due to alder's ability to grow in moist swampy soil, but secondly because it burns at a high temperature once charcoaled; hot enough to smelt iron from iron ore.[2] The alder trees at Cutaway often grow with multiple fingers all reaching up from one root source due to coppicing. Coppicing is a practice of cutting a tree at a low point of the trunk to create a 'stool', from which a new tree, often with numerous stems grows. Now that these trees are no longer coppiced, their growth pattern has been rendered abnormal; but there is knowledge held within this irregularity. The trees are witnesses to a time before the excesses of capitalist extraction and they hold that account to this day **[fig. 1]**.

The coppiced alder trees grow alongside the river that runs through Cutaway. The river's current was once harnessed to turn water wheels that in turn pumped bellows that stoked charcoal fires and drove hammers that beat the iron. A symbiotic relation was established, however, humanity's place within that symbiosis became distorted as the developing capitalist regime created a new relation to nature. Before enclosure, those tending to the commons knew that if they took too much timber this winter, then next winter would be cold. When the peasant population was removed from common lands, they were forced into working for a wage. This gave landlords, who were physically and psychologically removed from any lived relation to land, the power and circumstance to extract beyond what the land could provide.

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2   Today the responsibilities we impose on trees have shifted from source of fuel to carbon sink. 10 to 15 percent of annual carbon emissions are absorbed by forests, therefore deforestation accounts for 11 percent of global greenhouse gas emissions. See https://www.theworldcounts. com/challenges/climate-change/global-warming/global-co2-emissions.

Occasionally, as a result of the heating and hammering of the smelting process, the iron ore was magnetised. At the time magnetism was commonly thought to be a supernatural occurrence. An inexplicable alchemical attraction, caused by something divine or cosmic. During the sixteenth century and the boom of the Wealden iron industry, Europe saw the beginning of the Protestant Reformation, following a long period of Catholic rule. Religion played a violent role in the everyday life of a large section of society. In his text *The Spell of the Sensuous*, David Abram (2017, 8) claims that "it is likely that the 'inner world' of our Western psychological experience, like the supernatural heaven of Christian belief, originates in the loss of our ancestral reciprocity with the animate Earth". Abram suggests that notions such as a 'supernatural heaven' filled a void left by a loss of connection to our 'ancestral' position within a global ecology. He uses the word 'supernatural' to highlight a separation from the natural, that he claims is linked to,

> the modern, civilised assumption that the natural world is largely determinate and mechanical, and that that which is regarded as mysterious, powerful, and beyond human ken must therefore be of some other, non-physical realm *above* nature, 'supernatural'. (8)

Today we trust that magnetic forces pervade everything from plants and animals to the tides and their moon. Far from being a 'supernatural' occurrence, the magnetised ore was instead simply illuminating the complexities and peculiarities of the natural.

Raj Patel and Jason W. Moore claim in *The History of the World in Seven Cheap Things*, that twentieth century environmentalists 'have ascribed supernatural powers to nature – above all, the supernatural power to make or break civilisation' (Patel, Moore 2018, 102). This conception of nature is easy to comprehend with the capitalist tools of understanding at our disposal. But it puts us in opposition to nature and forgets that we are inseparable from it. The separation between nature and society was a capitalist invention, generated to act as an organising principle. Patel and Moore go on to claim that

> before society could be defended, it had to be invented. And it was invented through the policing of a strict boundary with nature. (46)

This nature/society divide formed a psychological distinction between us as society and nature as oppositional, and thus open to exploitation by society. This abstraction still haunts us today and forms a lasting linguistic, and thus psychological hurdle, as we try to visualise our way into a new world. The scientific revolution was gathering momentum as the Wealden iron industry was expanding, and the success and power of language to form division was not going unnoticed.

Scientific rhetoric enforced divisions not just between elements and species, but also between man and woman, and Europeans and everyone else; colonisers were even cataloguing certain groups of people as plant life, sanctioning further conquest and subjugation. Carolyn Merchant (2019, 2) writes in *The Death of Nature* that science, technology and the economy reconceptualised reality as a machine rather than a living organism. We once recognised nature as a caring and nurturing guardian, a view which kept extractive practices in check. For example, many traditional cultures saw mining

and metal extraction as a process of birthing metals from the uterus of mother earth. To satiate the extraction of earth's creations,

> miners offered propitiation to the deities of the soil and subterrain, performed ceremonial sacrifices and observed strict cleanliness, sexual abstinence and fasting before violating the sacredness of the living earth by sinking a mine. (4)

Metal smiths were given almost shamanic importance and saw metal extraction as a great responsibility. Although swathed in anthropocentric logic, these early mines were dug with the recognition that something finite was being extracted. Future capitalist, colonial and scientific expansion in the sixteenth century, sanctioned a newfound lack of restraint. The land at Cutaway is pockmarked with, now shallow, craters due to digging by the iron industry. Even location names in the area are haunted by the mining process. Cutaway Wood backs onto *Hammer* Wood and if you walk up *Slugwash* Lane you will soon find *Furnace* Pond.

Francis Bacon is often heralded as the architect of modern science. He wrote that humanity, directed by the cause of scientific discovery, should "penetrate into the inner and further recesses of nature" (Bacon 2011, 50). This interrogation was sanctioned as a way of ridding society of the perceived dangers of unscrupulous nature. The scientific revolution intended to find answers devoid of alternatives and produce classifications. It removed the space for symbiosis between beings or substances by imposing monocultural thought and stripping life down to its basic elements.

Storm Eunice blew through Cutaway in February 2022. Some trees were felled by the force of the wind. Where they fell an incredibly complex structure of root and mycorrhizal intermingling was uncovered, exposing structures mocking any attempt at individualisation. There was a time not so long ago when people spoke of plant communication as a far-fetched notion. However, through the recognition of mycorrhizal networks created by the hyphae of mycorrhizal fungi joining with plant roots, we now speak of trees, communicating, learning and behaving in recognisably sentient ways, without invoking supernatural forces. The more our knowledge of trees expands the harder it is to tell where one tree ends, and another begins. It seems conceivable that changes like this in ecological rhetoric uncover a finer attunement to nature's peculiarities and could lead to a perception of the life of other living organisms, as being as significant as our own.

While the divisive classifications of science need to be contested, it is also true that today the sciences are finding antidotes to some of their own failings. Isabelle Stengers calls for "an adventure of sciences", as opposed to science "as a general conquest bent on translating everything that exists into objective, rational knowledge" (Stengers 2012, 2). In his text *Entangled Life*, Merlin Sheldrake claims there are words like 'symbiosis', 'holobiont', and 'ecology', that do "useful work" (Sheldrake 2020, 103) as they are not terms of division, but instead open our minds to further possibility. They magnify what they describe, allowing space for imaginative expansion. They are words that help us manifest a different future, "because if we only have words that describe neatly bounded autonomous individuals, it is easy to think that they actually exist" (103).

A greater vocabulary for difference and specificity opens space for greater care and relation-building. But society removed from nature and defined by

capitalist language and logic finds it easy to forget. It is going to take a revival of imagination to envision our way out of climate change, but it is also going to take a practice of remembrance. Perhaps the trees have something to say.

3   A Haunting

One way of knowing that iron ore exists at Cutaway, is a thick orange sludge of ferric oxide that bubbles upward out of the soil. The earth is covered by patches of this rust-coloured primordial ooze. However, it is not only the earth that bleeds, but also the trees. The living wood of alder is a pale colour that turns a deep orange when cut. The illusion of bleeding led to many superstitions concerning alder trees, linking them to mystery and secrecy within myth and folklore. It is also believed that the flowers that grow on alder trees in spring were used to dye the clothes of outlaws such as Robin Hood. Evidently, it is not inconsequential that the tales of Robin Hood, who stole from the rich and gave to the poor, took place in the woods. There were, however, other tales of the woods being told [fig. 2].

Erlkönig is a poem by Johann Wolfgang von Goethe. Well known for his plays and poetry, Goethe also wrote scientific treatises on botany. *Erlkönig* translates as either Elf King or Alder King; a forest creature of Danish origin who lives in alder trees. Goethe's poem narrates the story of a father carrying his son on horseback through an alder wood. When the boy hears the Alder King call for him to dismount and walk through the woods, his father tells him he is just hearing the wind through the leaves, but when the pair reach the other side of the wood, the boy is dead. The poem is one of many of Goethe's works that express his understanding that nature contains elemental powers capable of harm.

Erlkönig was written in Germany in 1782. Enclosure took place in Germany during the sixteenth century; however, it was not put into law until the middle of the eighteenth, reflecting the progression of enclosure in England. *Erlkönig* is just one of many texts published at the time that expresses a distrust or fear of nature. Through capitalist and scientific endeavour nature had been physically, and in the collective consciousness, psychologically changed. A depiction of horror found in nature was being established, one that still haunts culture to this day.

Although climate change due to human action has been discussed since ancient Greece, it was not considered to be of concern until the 1950s. It was not until the 1970s that we saw the first UN environment conference and the term 'global warming' introduced into the public domain. Concurrently, the horrors of possessed nature had a boom of interest in Hollywood cinema in the 1970s and 1980s with films such as *Day of the Animals* (1977), *Long Weekend* (1978), *Kingdom of Spiders* (1977), *Frogs* (1972), *Pumpkinhead* (1988), and *The Toxic Avenger* (1984). *The Evil Dead* (1981) depicts a group of friends visiting a cabin in the woods only to be attacked by vines, roots and the trees themselves. The film contains lines such as 'it was the woods […] they're alive Ashley!', and 'I have seen the dark shadows moving in the woods […] whatever I have resurrected […] is sure to come calling for me' (*The Evil Dead*, 1981). Today we are more likely to see the horrors of nature in the form of disease or pandemic (*Carriers,* 2009; *Contagion*, 2011; *The Bay*, 2012; *The Flu*, 2013; *Virus*, 2019), trees taking revenge upon humanity (*The Happening*, 2008), apocalyptic weather (*The Day After Tomorrow*,
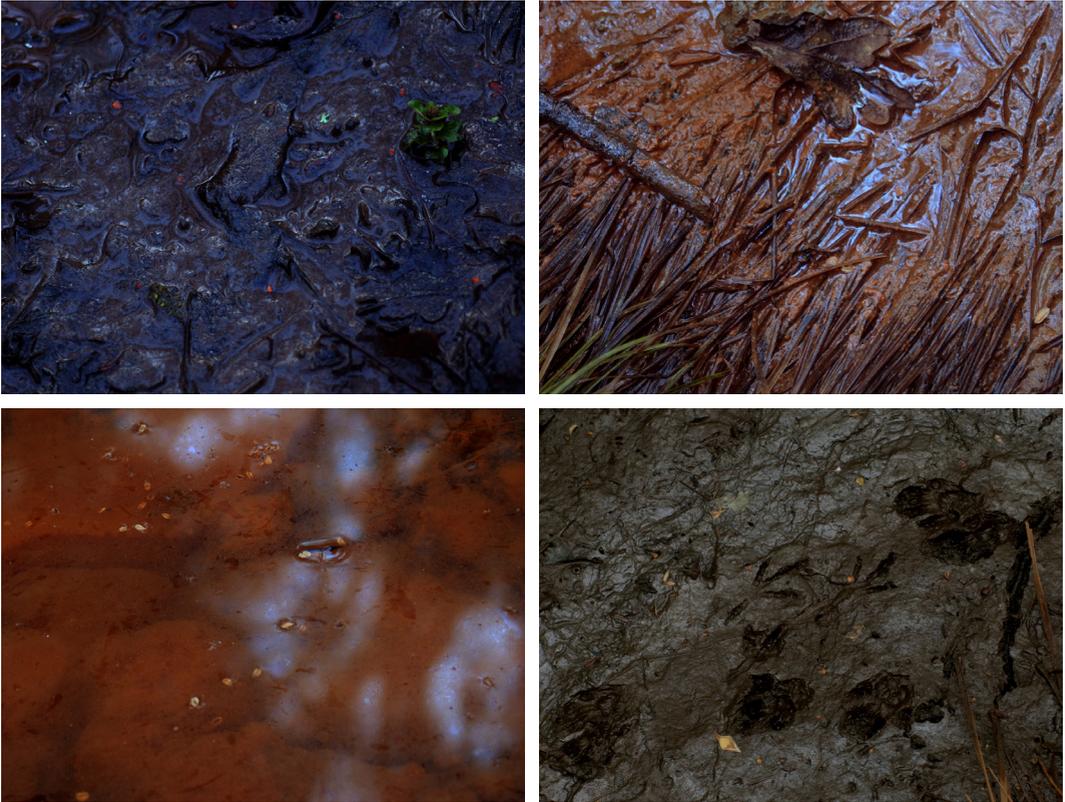
Figure 2 Ferric oxide at Cutaway wood (2021). © Sam Risley

2004; *2012*, 2009; *Geostorm*, 2017; *Greenland*, 2020), or nature so abundant the boundaries between 'man and beast' become indistinguishable (*Annihilation*, 2018). Many of these examples present nature fighting back, reproducing the idea that we exist in opposition.

Within both folkloric and more contemporary tales of hauntings, nature is often expressed as dead matter, ripe for occupation by the ghosts of deceased humanity. Sladja Blazan (2021, 161) describes a traditional haunting as "the projection of *human* will and 'energy' or spirit onto objects or beings which would otherwise remain inanimate".

With a contemporary recognition of plant life as sentient and containing agency, the horrors of nature are now expressed through conscious hostility. The supernatural power to make or break civilisation becomes fearful because we impose human notions such as revenge onto vegetal life. If the young boy from Goethe's poem had dismounted from his horse and walked, he may have realised there was little to fear in the woods.

4   A Call to Visitation

When I return to Cutaway, built-up feelings of anxiety or disquiet are often alleviated by the aroma of growth and decay suspended in the damp woodland air. Cutaway was with me now, whether I was thinking about it or not. I had begun to understand the demands of the woods because I was present. But my presence was changing with each visit; this time I was here *again*. The repetition of my stays was a choice, and what started as a practise grew to be a pleasure.

In her essay *It's Not Rocket Science – It's Just Community': Radical Ffestiniog*, Grace Blakeley (2022) refers to *Restanza*. 'Restanza' is a term coined by Vito Teti, an Italian anthropologist who spent much of his life studying the town where he was born. Restanza describes

> choosing to stay in a place in a conscious active and proactive way by actively guarding it, being aware of the past while enhancing what remains with an impulse towards the future. (Blakeley 2022, 90)

There is no fix-all for the problems of climate change, and each habitat involves its own set of concerns. Although theoretically understood, without lived experience our psychological separation from land abstracts the notion that we are damaging an environment that nurtures us from afar. This separation needs to be adjusted.

We need more space where people can connect with other forms of life, as access to spaces like Cutaway may help to shift the violence of capitalist abstraction. If we do not remember often, we may forget. As Robin Wall Kimmerer so astutely declares in her text *Braiding Sweetgrass*, 'breathe in its scent and you start to remember things you did not know you'd forgotten' (Kimmerer 2013, 65).

Therefore, as Teti writes of the benefits of staying, I would make the argument for visiting. Visiting in a way that is conscious, curious and nurturing, or as Teti would say in a 'proactive way by actively guarding'. These visits should be as much about listening to the needs of the trees as one's own. Simon and Konrad, the brothers who own the woodland at Haywards Heath, are conscious of its ability to foster productive relationships and keen to encourage that kind of activity. There are no fences around the woodland, and I have met numerous passing travellers during my visits. The brothers invite people that they trust will be cautious, and whilst there are rules, it is the woodland that defines and expresses the rules beyond Simon and Konrad's guidance.

Our visits should not be about simply soothing our anxieties wrought by the stresses of the urban world, for this just supports the inherent problems of the economic market. Nor should it be about escaping the broken city to visit archaic wild nature. For one, there are very few primordial woods left, but beyond that to 'escape' the city is to prop up the insidious notion of a society/nature split. Disregarding one's impact is another concern of visitation. However, through fostering relationships, I believe disregard can develop into guardianship. Establishing this relationship relies on access, and consequently less of the wild spaces in England being fenced off. 92% of England is off limits to the public. The majority of this 92% is not protected woodland but rather golf clubs and the gardens of stately homes. Rebecca Tamás describes in her collection of essays titled *Strangers*, how painfully ironic it is that St Georges Hill in Surrey, where in 1649 Winstanley and the Diggers

established a new commons in protest of enclosure, is now 'a gated community with huge private tennis courts and golf courses' (Tamás 2020, 24).

There is also much debate about the efficacy of removing human access entirely and enclosing parts of virgin forests. Although this seems an effective fix to a problem that feels out of control, there must be a way that we can relearn or reimagine a beneficial relation for all. We should not see humanity as the scourge, instead it is our political and social structures that need contesting.

5   Regrowth in Ruin

The woodland at Haywards Heath is laced with a loose spider's web of paths trodden by travellers over many years. Something tells us to stick to a path, so most of us do, slowly deepening the route rather than creating a new one. Some paths are deep and wide enough for a vehicle, but some are freshly made, so lightly trodden they will not be present tomorrow. None are straight lines; thus, none describe haste. All meander in contact with the woodland, moving between rather than through. But Cutaway is where the paths stop. The density of the plant life constricts human movement and forces one to slow down and "notice their tempo" (Tsing et al. 2017, 10). All signs of passage are swallowed back up, as if one's presence was an apparition. Each step generates a new organisation of trees in relation to others, and a newly complicated horizon. This is not a horizon of range, but of animated arrangement and rearrangement. The woodland began to feel less like a place, than a happening. It is constant *becoming* pulled into focus my own self as persistently materialising, making me feel as though if I were to lie down and sink into the soil that would be fine, and appropriate, not a nihilistic urge but a proactive one. The sights, smells and sounds alerted me to the fact that the biodiversity at Cutaway was different, denser and more plentiful. Yet this was once a site of industry. The extraction processes and alder coppicing had helped to create and maintain a thick swampy environment. Therefore, the farming practices that took place after the iron industry moved on, were unable to farm birch, oak or cedar, as they had done all around this sanctuary. It was in fact the violent history of industry that had created the conditions for the ecosystem that now protected it.

This recognition seemed at first a sorrowful illumination of a violent history, recognisable as an iteration of the capitalist regime that continues to damage our planet. However, ending the narrative with destruction, we also end with apathy. As Anna Tsing writes in *The Mushroom at the End of the World*,

> industrial transformation turned out to be a bubble of promise followed by lost livelihoods and damaged landscapes. And yet: such documents are not enough. If we end the story with decay, we abandon all hope. (Tsing 2017, 18)

The acknowledgement of what has occurred at Cutaway since the iron industry moved on, presents the power of nature to return, and beyond that, even thrive. The desire for an archaic untouched nature is only found through conquest and extermination, instead we need to learn to work with our haunted landscapes. Not to fully exhume the horror but instead "negotiate it with flair" (18).

Looking to the future of Cutaway, it is worth stating how effective alder trees are at renourishing the soil in which they grow. The nitrogen-fixing nodules on the alder's roots greatly improve soil fertility, making this tree ideal for reclaiming degraded soils. The soil at Cutaway today is coal black, thick and heavy, and is often marbled by a bright orange vein of ferric oxide. It supports a thriving ecosystem that is an undulating mass of luminous green in the summer, dappled with bluebells and snowdrops in the spring, and where the ground water pools, tall Irises flourish. Ferns and tangled blackberry bushes stop you trespassing but just beyond, it is possible to catch glimpses of white anemones blooming near the river **[fig. 3]**.

Anna Tsing argues that what we acknowledge by identifying growth in capitalist ruin is that

> thinking through precarity changes social analysis. A precarious world is a world without teleology. Indeterminacy, the unplanned nature of time, is frightening but thinking through precarity makes it evident that indeterminacy also makes life possible. (18)

Some stories of regrowth cannot be foreseen, but the unforeseen and precarious relationships formed by indeterminacy are also the cause for many of the relations that create life. In his essay *Getting Along with Nature*, Wendell Berry writes,

> what we call nature is, in a sense, the sum of the changes made by all the various creatures and natural forces in their intricate actions and influences upon each other and upon their places. (Berry 2017, 160)

We cannot exist apart from nature, yet we cannot exist at all without having some bearing and impression. Humanity needs to learn to know the world again, in all its indeterminacy, recognise that what is good for it is what is good for us, and then bend to its limitations. Just as importantly, we need to do away with capitalist abstractions that separate us from nature and make us fearful of the mysterious and intangible.

Climate change begins as a crisis of inequality, expressed through enclosure, human and non-human subjugation, colonial oppression, the Atlantic slave trade, global patriarchy, consumer culture, and industrial and postindustrial exploitation of natural resources. Climate crisis then compounds and magnifies these inequalities. In 2016 Black Lives Matter tweeted, "the UK is the biggest per-capita contributor to temperature change and among the least vulnerable to its affects".[3] I am writing this in the summer of 2022 while the Weald is luminous green with healthy abundance and its inhabitants reside in their dry and temperate homes. At the same time a third of Pakistan is under water. The greatest damages of climate change are going to affect those who have done the least to cause it.

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3 https://twitter.com/ukblm/status/773053025720078336.

Figure 3   Bloomings at Cutaway wood (2021). © Sam Risley

6   Conclusion

We disregard climate catastrophe due to its intangibility or 'slowness'.[4] In the global north at least, we have yet to truly behold its effects, thus it does not compute with our empathy-illiterate capitalist culture. However, following a summer that recorded the hottest day in the UK on record, a fuel crisis sending thousands into poverty, and stories of 'exceptionally rare' weather events appearing in the news on a near daily basis, we are beginning to recognise our precarity. We forgot an understanding of the natural world as a place of mysterious intelligence. Its complex 'strangeness', which had never previously been perceived as a hostile unknown, was instead the reason a reciprocal relationship was significant. Renewing this relationship has the potential to shape politics, society, culture, education, the economy and manifest a better way of life beyond an averted crisis. A way of life that instils joy through gratifying relations, community, freedom and self-worth. We must remove the human ego that supports inquisition, learn to be receptive rather than expectant and sometimes just be in admiration. Only through a practice at once productive but patient, can we change our liveability. It is important that we slow down and listen, because it is our turn (again) to be re-made by our environment.

The troubled history of Cutaway Wood communicated a great depth of knowledge. To recall it felt significant, as its specificities were helping to unveil the complexities of the whole. My ritual of visitation felt like a first meeting, an introduction to a practice that in its very nature can never be fulfilled but must commit to being consistently revisited. I found no concrete answers, only fragmentary insights revealed through an experience involving smells, temperatures, tastes, textures, comfort, discomfort, joy, unity, solitude and communion. However, to return to a reference from the beginning of this essay, one encounter rings distinctly true; "the only thing sacred about the earth is that we can help make and care for it… well, we with worms withal" (Federici 2019, XVII). Remember, it is fragile, but go visit the woods.

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4   For further reading on slow violence see Nixon 2011.

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Uprooting Silicon Prairie

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Abstract   The American Midwest is undergoing a major renovation. A landscape known for facilitating the farming and distribution of crops and animal products is transforming to enable the proliferation of digital platforms, retrofitting infrastructure like buildings, mines, factories and fields in the service of producing hardware and software that create a platform for other actors to conduct their own business. A new economic framework called the Silicon Prairie has declared Iowa, Missouri, Kansas and Nebraska as a mecca of data production. While there has been increased scholarship on the effects of the platform economy in urban areas, drawing mostly from the study of gig work, smart cities and governance optimisation, there is a noticeable gap in researching how the infrastructure of platform capitalism materialises within rural environments and smaller urban settlements. This essay presents three speculative design interventions in a project called Digital Permaculture.

Keywords   Re-worlding. Multispecies. Architecture. Platforms. Regionalism. Permaculture.

Summary   1 Introduction. – 2 Digital Permaculture. – 2.1 On Earth, Something is Always Burning: Production. – 2.2 Networks Follow Networks: Storage. – 2.3 Water is Life. – 3 Conclusion: Platform Capitalism on Main Street.

1   Introduction

With around 5 billion people online today, the total energy footprint of the information and communication technology ecosystem is on par with that of air travel.[1] An article by The Guardian Environment Network (2017) estimates that by 2025, the production, circulation and storage of data is scheduled to use a fifth of the world's energy, a small fraction of which would be considered 'clean'. According to research done by Greenpeace, a single Google search, perhaps the one that led you to this essay, can use anywhere from 0.4-7.0 grams of carbon, or the equivalent of driving a car 16 metres. Just having a Gmail account open for one year consumes 1,200 kilograms of carbon. A single email without attachments can use four grams of carbon,

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[1]   For an energy forecast of digital infrastructure, see Jones 2018.

knowledge which might make us think twice about all of the meaningless subscriptions filling our inboxes.[2]

In early twentieth century Britain, getting 'on-the-line' became a popular expression to describe settlements connected to the material goods supplied by a railroad. Connection was quite literally referred to as the manifestation of lines materialised first on paper, in the telegraph wires, the railroad tracks of an expanded territory and later in the light speed travel of fibre optic cables. Settler industrialists, corporations, individuals and groups who had access to these powerful networks came to be associated with the economic benefits of a progressive, technological society. Today, the term 'on-line' is reserved for individuals who are 'active' or ready-at-hand to participate in digital communication, omitting what was historically considered a social continuum of material flows.[3]

There is not a clearer example of the ascension of on-the-line infrastructure than in the Great Plains of the American Midwest. In order to feed the growing capitalist centres of Chicago, Minneapolis and St. Louis, these settlements were established by railroad speculators in the nineteenth century to expand a burgeoning railnet and penetrate new markets, while causing irreparable damage to non-commercial forms of life and indigenous world making projects. The patterning of these developments have come to be known as 'tracks and elevator towns' as railroad companies frequently commissioned grain elevators as the first buildings from which the towns' urban form was generated. In states like North Dakota, railroad speculators and their developer confidants drew town plats in symmetrical, orthogonal, centre and square templates before arriving at the reliable 'T' layout, with a Main Street running perpendicular to the train station [fig. 1]. In thousands of hectares across the Midwest, T-towns were built every 10 miles, as far as a farmer could reasonably carry grain in a day's journey.[4] An architecture of storage and circulation punctuated these hinterlands, as larger and larger monocultures and the associated ruins of disease, oppression, and built obsolescence moved westward and northward. Meanwhile, the Robber Barons of American cities, whose railroads were often represented in popular media as tendrils of an evil octopus, reaped enormous profits.

The capillary networks that moved early twentieth century commodities like timber, wheat and soy, established the routes of data circulation, transfer and power supply seen today. State, municipal and corporate actors splay reels of fibre cables, centralised and edge data centres, colocation hubs, transfer stations, 'fiberhoods', 5G small cells, cell towers, power stations, wind farms and solar panel fields, big box stores, underground and open pit mines, wifi routers and charging points. All were laid across the extractive networks of yesterday. An observer of the Midwest would be forgiven for not knowing the difference between a data centre and a Walmart, a semiconductor manufactory and a Bass Pro Shop. The large, anonymous

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2 A collection of energy statistics from eight different organisations have been collated here: https://www.custommade.com/blog/carbon-footprint-of-internet/.

3 For a material and social overview of online history, see Banks 2015. In the Midwest, rivers often preceded the lines, as French aristocratic families traded fur along river routes, displacing indigenous Americans or forcing their gradual reliance on mercantilism. River networks provided less friction than the land and were powerful orienting features for traders.

4 For more on the lasting geography of rail networks see Hudson 1985..
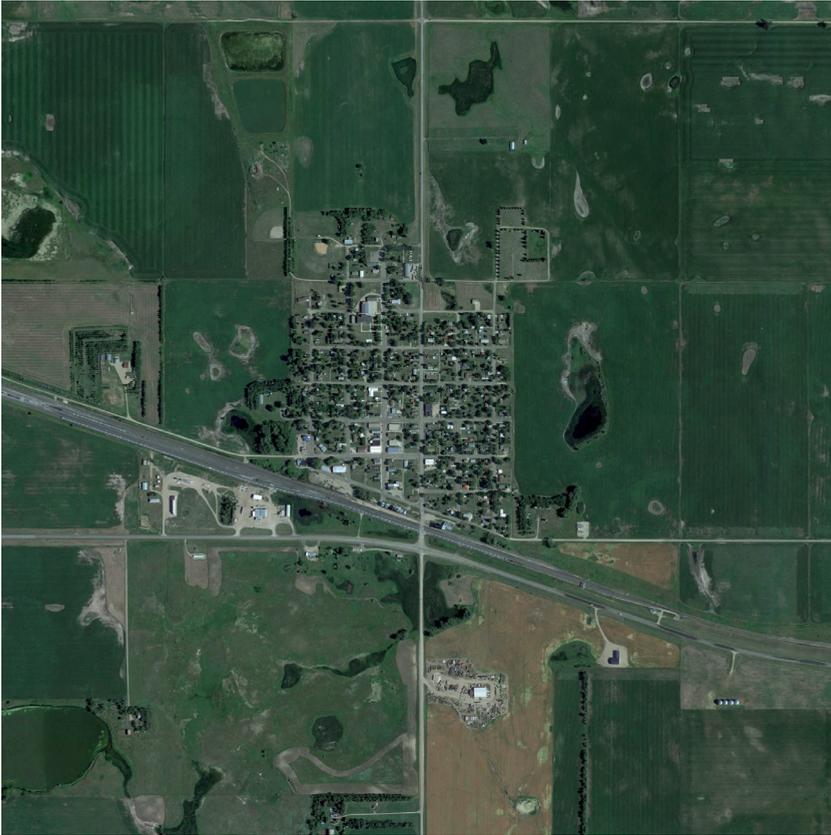
Figure 1   A typical 'on-the-line' settlement, organised along a railroad and grain silo. 2019. Accessed from Google Earth, Kansas

buildings that inhabit the plains, keeping a large part of the country online, expand and expand as they recede from popular consciousness.

Enter *The Silicon Prairie*: a comprehensive economic campaign that views Iowa, Missouri, Kansas and Nebraska as the new mecca of digital investment and opportunity.[5] As just one of many Silicon Valley spinoffs (Silicon Beach, Silicon Mesa, Silicon Rainforest, etc. have all been boosted in the United States), the Silicon Prairie is increasingly synonymous with the benefits and shortcomings of platform capitalism.[6] For rural communities – historically the last to receive new technologies – access to greater digital equity means the retention of young family businesses and the ability to participate remotely in urban economic flows. The disadvantages of increased digital uptake include increased dependence on corporate monopolies like Facebook and Microsoft, the devolution of family business into precarious

[5]   See https://siliconprairienews.com/about/.

[6]   According to Nick Srnicek, platform capitalism is the production of hardware and software that create foundations, or platforms, for other actors to conduct their own business (Srnicek 2017).

workers (Weigel 2023), and increasing levels of energy use and rare earth extraction necessary to provide the hardware, software and power to new digital infrastructures.

These forces converge in the latest big-box and underground building typology on the plains: the rural data centre. Within the rural data centre we begin to see the prevailing tech hierarchy attempting to remake the planet as a kind of digital plantation, where the basic underlying components of profiteering can be replicated (or unearthed) endlessly, at scale, and without resistance.

2　Digital Permaculture

The Midwest is no stranger to the failures of plantations and monocultural farms, in particular their ecological and social impacts. The model of concentrated, intensive farming, whether in the realm of corn, soy or wheat, leaves the region vulnerable to overabundance, exhausted soils and environmental ruin. It becomes necessary to consider an alternative approach based on more environmentally holistic principles.

I use the term Digital Permaculture to explore a set of multispecies practices that might be suitable for the exhausted soils and spaces of American hinterlands while also facilitating Internet connectivity. In the mid 1970s, Tasmanian based environmental designer Bill Mollison and David Holmgren produced a comprehensive collection of technical documents to productively modify human and non-human relationships which culminated in *Permaculture. A Designer's Manual*. This far ranging document illustrates how to construct "the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way" (Mollison 1988, IX). It addresses topics as diverse as 'Plant themes for drylands' to 'An Ideal Demographic Profile of a Steady-State Nation'. The style of the text reveals numerous anxieties typical of the era: acid rain, pesticides in tap water, peak oil, etc. In many ways, Holmgren and Mollison were building on radical environmental criticism of the 1970s in Australia and North America, providing alternatives to the deleterious effects of monoculture farming.

Permaculture is not without its problems. Those working in Food Sovereignty movements remind us that David Holmgren and Bill Mollison sought to create their practice using knowledge taken unwillingly from indigenous people. In Australia especially, where permaculture was first articulated, ecological commitments often have an undercurrent of ethnonationalism (Gaynor 2012). Often practitioners of permaculture are those with the land, money, and time to experiment. In some cases, registered permaculture practitioners take on free labour in the form of burnt out millennials who need reprieve from the city and 'woofers' who work in exchange for food and lodging. Most recently, the COVID-19 pandemic has caused a schism in the movement around the role of the state and the legitimacy of vaccine mandates (Leahy 2022).

As Kezia Barker shows in her work on food security and alternative food futures, permaculturists are often both ecological activists and apocalypse preppers. What they share, besides a vision beyond an ecocidal neoliberal present and a desire to repair society and soil, is an ethos towards objects and their functions in the pursuit of survival (Barker 2020). Objects

are seen as a site of flexibility and potentiality: a single object deployed in a self-sufficient farm might have multiple uses, some that transcend their original conception. For example, a permaculturalist might see a large, exposed boulder in the mountains and think how best to harvest the water that would fall across its surface should it rain. Similarly, they might view a discarded aluminium section as a good way to temporarily store water or firewood. This ability to see the potential in objects strikes me as a necessary skill for navigating an ecologically compromised future, whether it be in the service of Internet access or lower impact farming practices.

Moving forward with a permacultural ethos of object adaptability and scepticism toward the ecological practices of the state, the following three sections each highlight a speculative design intervention into the Silicon Prairie. They possess the kernel of an alternative and more sustainable IT network. There are questions that have guided the exercise: what does the land want? What already exists? What cannot we afford to lose? Digital Permaculture is characterised by a desire to analyse the many layers of our current energy-intensive relationship to the Internet, and remake them through just, rational, and ecologically sensitive means.

If the Internet is built upon the monocultural models of the past, then Digital Permaculture focuses on the production, storage and circulation of data as interlinked with specific ecological conditions that benefit from holistic and long term imaginings.

1.1   On Earth, Something is Always Burning: Production

The suppression of fire, as a form of land management and communication, has been central to the project of settler colonialism (Pyne 1997). Fire is integral to the ecological health of the tallgrass prairie, which must experience routine burning and grazing to thrive. Burning removes dead plants, recycling nutrients and suppressing invasive woody plants that would otherwise prevent the grasses from the sun. After fire burns off dead matter, large herbivores like bison graze new vegetative shoots, eventually moving on to new food sources, leaving plenty of fuel behind for the next fire. The imbrication of fire and grazing gives the prairie its unique heterogeneous appearance, creating a mosaic of diverse lifeforms. Prescribed burns in prairie conservation zones happen at predetermined intervals along natural buffers formed by watersheds. The United States Geological Station (USGS) outlines hydrologic unit codes (HUCs) on the basis of watershed morphology, boundaries that could become more valuable in a new fire regime, where designated fire wardens and data technicians become the focal point of a social economy of terrestrial energy.

According to pyrogeographers Nigel Clark and Kathryn Yusoff, a typical day on earth is punctuated by 400 trillion tiny explosions, used in the machines that propel humans between places (Clark, Yusoff 2014). Almost all of this combustion has been removed from sight, happening inside of the internal combustion engines of endless vehicles and agricultural machines. If digital production is to replace large-scale farming, then we must reclaim the diminishing tallgrass prairie ecology, and the enormous biodiversity and carbon sequestration it affords. Knowing that the grasses need to burn for the soils to thrive, how can we create opportunities between the combustion required for digital production, and harness it toward the

Figure 2   In 2014 Light Edge Solutions opened a digital co-location centre inside of a former limestone quarry in Kansas City, Missouri. Photograph by the Author
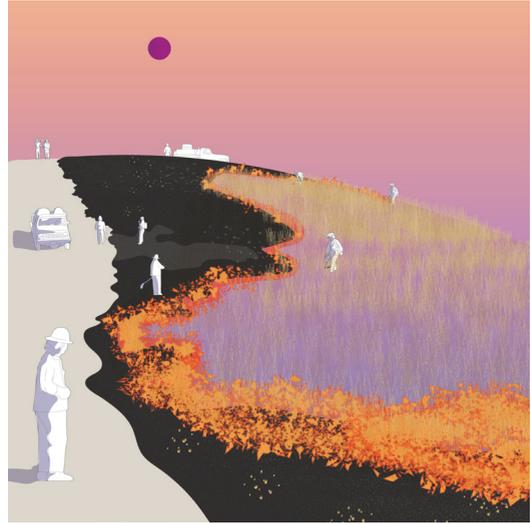
Figure 3   Matthew Darmour-Paul, *Burning Regime in Practice*. 2019

ongoing land care practices of the prairie? How can the fire that one practice generates, be transferred to the fire that an ecology needs?

In Missouri, there are nearly a thousand active mines that could halt their extraction of lead, zinc and limestone in order to mine data. Some have already changed over **[fig. 2]**.[7] Limestone quarries create the ideal house for data servers. The heat generated from the data mines lowers the combustion rate of the air in the winter, making for ideal prairie burning testing grounds. Considering the co-location of data mining and prairie ecological conservation offers opportunities for regeneration **[fig. 3]**. In dry summers, when the risk of wildfires are high, access to data production ceases, in order to keep heat out of the atmosphere.

1.2   Networks Follow Networks: Storage

Because the Internet rides on the back of landline telephone networks, the landlines on the back of the railroad, the railroad on the back of telegraph lines, etc., then might the intentional practice of restoring the prairie be planned on the back of the Internet? The midwest is structured along a clearly defined grid of grain silos equally spaced across the landscape, and connected by railroads. This grid is imagined as a new unit of distance for the storage and distribution of data, made possible through the repurposing of this grain storage infrastructure.

In 2008, a South African homing pigeon was found to have moved 50 Gb of data faster than the predominant ADSL connection by the nation's largest

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7   See "Geography of Underground Co-Location Data Centers", https://panethos.wordpress.com/2022/04/27/geography-of-underground-co-location-data-centers/.
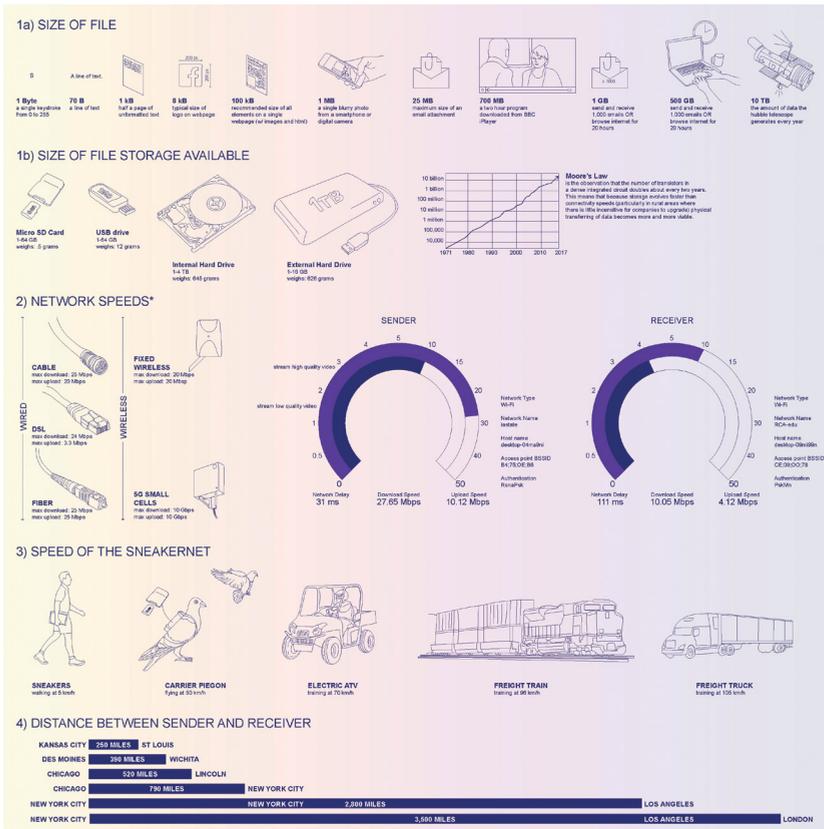
Figure 4   Matthew Darmour-Paul, *Sneakernet Efficacy Diagramme*. 2019

Internet service provider, Telkom (Reuters 2009). Similarly, in 2010, A pigeon in Yorkshire with a micro-SD card was found to transfer a Youtube video faster than the slower, more predominant rural Internet could (Fae 2010).

Experiments in moving data physically began in the 1990s and were called *sneakernets*, a reference to moving storage units with someone in sneakers between two locations. Because storage capacity evolves at a much faster rate than Internet connectivity, the movement of objects or subjects across existing physical infrastructures might be the most effective way to move data in rural America. Sneakernets are often tested against the Internet, using an analysis that depends on five factors: the size of the digital file being transferred; the size of the storage media; the speed of the Internet connection; the speed of the sneakernet; and the distance between sender and receiver [fig. 4].

The grain silo is emblematic of the Midwest's agricultural history, and the project re-considers the future of these monumental vertical halls as sites for storing data, with working spaces in elevated distribution areas. On-line settlements in Kansas and Nebraska become the sites of data storage and harvesting. Medium scale compliant hosting, data protection, and collocation services install their servers in the silos, which also work to warm homing pigeons outfitted with micro SD backpacks for local data exchange [fig. 5].

1.3   Water is Life

The circular pivot irrigation pump was invented in 1940 by a Colorado farm-hand named Frank Zybach, to increase the even distribution of water across field crops. The invention struggled to perform until after World War II, when gas-powered water pumps and high-tech irrigation systems came together, turning the Central Plains into the world's breadbasket and meat market. However, because the pump draws nonrenewable fossil water from the Ogallala aquifer, which has been storing water for millennia without being drawn out, there is a legitimate fear that the well will run dry by the end of the twenty-first century – a situation that would take 6,000 years to reverse (Ashworth 2007).

One characteristic of plains ecosystems is their absence of trees which have co-evolved with bison. Bison rub up against the bases of trees to help them shed their coats. This action can often remove an entire layer of bark, killing the tree, thus ensuring that low level grasses can thrive for the bison to eat. In the early nineteenth century, telegraph lines were found as sites of intense bison contestation, as each fought over these ideal scratching posts. Trees, large boulders, telephone poles; nothing was safe from a good rub. The intensive irrigation and depletion of the aquifer must halt, which offers an opportunity to consider re-use of the now redundant irrigation icon. A new scratching post from the obsolete irrigation rigs is coupled with electric powered wifi signal boosters, forming a bi-fi scratching post that can move small volumes of data between disparate regions **[fig. 6]**.

Figure 6 Matthew Darmour-Paul, *Bi-fi Scratching Post* – an Internet signal booster and scratching post fashioned out of disused circular irrigation pumps. 2019

3   Conclusion: Platform Capitalism on Main Street

In 1920, the author Sinclair Lewis masterfully criticised the banality of Midwestern life in his novel, *Main Street*. The book describes the life of an earnest yet cultured city-goer who moves to a generic tracks and elevator town in the deep prairie of rural Minnesota. These towns were promoted as the next boom towns, with endless opportunities for wealth creation. Despite the persistence of the novel's protagonist, the town and the sociality that the Main Street produces overwhelms her plans for reform. The generic midwestern town, according to Lewis, produces a particular kind of human: one that is resistant to meaningful change.

The tracks and elevator towns saw their populations peak in the years Lewis was satirising their inhabitants, at a time between intense railroad use and the adoption of the private automobile.[8] Population data suggests that marketing new towns as the booming centres of tomorrow succeeded only in their becoming reliable back-of-house operations for other,

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[8]   For more on this analysis, see Curtis White 2008.

larger settlements such as Chicago and Minneapolis, the homes of their various stakeholders. These towns have been declining over the last hundred years, and this project considers what opportunities there might be for their continuation.

The Midwest is the factory floor of the United States, one that is undergoing a major renovation from farming crops to farming data. Where there were once ribbons of green soybeans and corn stalks, today there are anonymous logistics buildings so large that they begin to merge with the horizon. Data centres and fulfilment centres are entangled in a libidinal economy, where 'binge on' has become the new unspoken creed. Farmers who had become accustomed to working in relative isolation with technical machinery in the fields are moving indoors to tend to the whirring lights of server racks, cyber attacks and storage failures.

From within this eco-social context, Digital Permaculture is a suite of speculative design proposals intended to re-purpose the ecologically damaging technologies of farming in the Midwest toward the Internet economy. Using the repetition of these farming types, the project manifests at a number of scales that can be repeated with a long view toward an ecologically just Silicon Prairie, uprooting the homogenous, stultifying and damaging monocultural Internet in the process. Practising digital permaculture requires identifying linkages between what the land wants and the tools society has at its disposal. It imagines low tech, asynchronous communication networks to serve the digitally divided plains alongside a set of guiding ecological patterns, unique to the prairie, that are suitable for de-industrial data usage.

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Section 3
Invisible Agencies

Reintegrating Nuclear Knowledge Through Contemporary Art
Transforming Repositories into Living Archives

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Abstract This chapter explores how contemporary art can reintegrate nuclear knowledge into society by transforming repositories of radioactive waste into living archives. It argues that utilising contemporary art as a means of archiving and engaging with the past provides a powerful tool for involving individuals in shaping a shared future. The chapter examines different countries' approaches to nuclear semiotics, with a focus on Italy's ongoing search for a permanent disposal site. It analyses the *Art Spaces. Nuclear Decommissioning. Science at the service of the future generation* exhibition held in Italy in 2017 as an example of artistic engagement with radioactive waste, drawing from interviews with participating artists. The chapter delves into the complexities of the Italian nuclear landscape, explores strategies for sharing Italy's nuclear legacy, and emphasises the capacity of contemporary art to stimulate dialogue and involvement. By investigating international influences, the chapter offers insights into effectively using contemporary art as a catalyst for discussing collective legacies and understanding Italy's nuclear repositories.

Keywords Radioactive legacies. Archiving method. Art practices. Nuclear knowledge. Cultural heritage-making.

Summary 1 Can Contemporary Art Transform Nuclear Knowledge and Engage Society? – 2 Exploring Nuclear Semiotics: Communication Strategies and Artistic Endeavours for Radioactive Waste Management. – 3 The Shift Away from Nuclear Power in Italy and Challenges in Waste Management. – 4 Toxicity and Waste in Contemporary Art. – 5 The Italian Experience with Nuclear Art: *Art Spaces. Nuclear Decommissioning. Art at the Service of Future Generations Exhibition.* – 6 Conclusion.

1 Can Contemporary Art Transform Nuclear Knowledge and Engage Society?

The final material destiny of radioactive waste is to be vitrified and then stored in facilities or permanent isolation from the environment. Usually, this type of waste is buried in relatively deep geological layers in underground repositories and facilities made of granite rock, clay, and salt. At present, each country involved in nuclear activities is ethically and legally bound to store the radioactive waste produced: whilst some countries like Finland have formalised their long-term underground storage plan, others are still deliberating on the most suitable methods for managing their radioactive waste production. Nevertheless, even if the final goal is to store this particular type of material in a safe and isolated environment, scholars such as Peter van Wyck, a Canadian cultural theorist and communication professor, have contended that nuclear waste distinguishes itself from other forms of refuse. Radioactive residues can not be entirely contained or disposed of over a time scale consistent with the human lifespan, consequently, as van Wyck (2005, 19) has stated, "there is always leakage". Compared to the continuous flow in which matter exists (Nail 2021; Ingold, Simonetti 2022), these repositories are denoted by a hermetic and closed nature, dividing the nuclear materiality from the never-ending flux of matter. While it is fundamental to maintain a distance between the spaces we inhabit and repositories of radioactive waste, I would argue that it is necessary to get closer to them in a metaphorical sense. If nuclear materiality must be removed from the flux, nuclear knowledge must be reinserted into it: it should circulate, be shared among people, and should create connections above the surface.

This chapter explores the role of contemporary art in reintegrating nuclear knowledge into society and disseminating it effectively. It examines how contemporary art has approached the archival of radioactive waste, utilising case studies and insights from artists engaged in this subject. The argument put forth is that repositories and deposits should transform into living archives, fostering cultural engagement and facilitating open discussions on nuclear knowledge. The aim is to make nuclear knowledge accessible to a diverse audience and encourage democratic participation, emphasising the importance of creating inclusive spaces for dialogue regarding our collective legacies. By employing contemporary art as a means of archiving and engaging with the past, it becomes a powerful tool to involve more individuals in shaping their shared future. To achieve this, the chapter adopts the following structure, beginning with a concise overview of different countries' approaches to nuclear semiotics, such as Finland and France. However, the main focus lies on Italy, where the search for a permanent disposal site for radioactive waste is ongoing and artistic exploration of this topic is still in its early stages. Notably, the chapter explores *Art Spaces*, the only existing artistic exhibition on this subject held in 2017, commissioned by the JRC (Joint Research Center) in Ispra and held in its Interim Storage Facility (ISF). To explore the specific context of Italy, this chapter relies on interviews and testimonies from two artists who participated in the *Art Spaces* exhibition and, drawing from these interviews, delves into the complexities and nuances surrounding the Italian nuclear landscape. It examines the artists' perspectives, insights, and creative approaches, which shed light on the challenges and possibilities of artistic engagement with

radioactive waste. By incorporating these firsthand accounts, the text provides a multifaceted analysis of the interplay between contemporary art and Italy's nuclear repositories. Building upon international influences and solutions, the essay delves into potential strategies for sharing Italy's nuclear legacy among its citizens. It critically examines the role of incorporating nuclear heritage into cultural heritage and investigates the capacity of contemporary art to stimulate dialogue and engagement, shedding light on the complex relationship between nuclear knowledge, artistic expression, and public involvement.

This chapter is primarily concerned with artistic responses to nuclear waste as a lens through which to interrogate our nuclear legacy. However, it is imperative to pause and reflect on the broader intricacies of nuclear power production. Capital-centric techno-politics often find common cause with state apparatuses, incentivising the adoption of technologies that promise profitability or mechanisms of control. Within our current energy-intensive paradigm, the allure of nuclear power lies in its purported ability to mitigate reliance on fossil fuels, minimise CO^2 emissions, and optimise safety measures. Yet, these benefits are tempered by the ecological damage and latent risks exacerbated by governmental inadequacy and corporate economising. Even the theoretical potential of thermonuclear fusion – touted as a solution to our energy crisis – carries its own environmental impositions. It would necessitate substantial water consumption and depend on lithium, a resource with an estimated global reserve of a mere 17 million tons (Stozhko 2022). While many facets of nuclear power production are complex, including uranium mining and enrichment, which emit substantial pollutants and heighten the risk of nuclear weapons proliferation, the end of the production cycle poses its own challenges. Nuclear waste remains dangerously active for thousands of years, making disposal a difficult and hazardous task. In the end, the profits from nuclear energy are enjoyed by private entities, while the cleanup and environmental risks are shouldered by society at large. This leaves communities dealing with the consequences of nuclear presence and facing substantial costs for new power stations needed to meet the ever-increasing demands for energy in a capitalist production-driven world (Kuletz 2002). Moreover, it is worth noting that the issues surrounding nuclear power production and its repercussions intersect with global issues related to nuclear testing, indigenous rights, and marginalised communities. Specifically, the concept of nuclear colonialism (Hecht 2003) connects with the broader discussion of the nuclear industry's implications, its focus on profit, and the subsequent burden placed on communities and society as a whole (for more on the subject see Endres 2009a; 2009b; Keown 2018; Runyan 2018).

2 Exploring Nuclear Semiotics: Communication Strategies and Artistic Endeavours for Radioactive Waste Management

Nuclear semiotics, a specialised field studying the communication strategies for conveying messages about nuclear waste hazards over vast time measures, derives valuable insights from a pool of distinguished scholars cutting across numerous disciplines including semiotics, linguistics, anthropology, and nuclear engineering. Clarifying the contributions of three notable scholars in the field may elucidate the study further. Thomas A. Sebeok

(1979; 1988; 2001), a prominent semiotician, has been central to shaping the recognition and interpretation of messages corresponding to nuclear waste. One of his most interesting semiotic solutions, also for the proposed approach in this chapter of the human-nuclear relationship, which suggests instead to get closer to the nuclear, is the solution offered by Sebeok in 1984 in the technical report *Communication Measures to Bridge Ten Millennia*. Here Sebeok (1984, 24) put forward the formation of an "Atomic Priesthood",[1] i.e. a group of nuclear experts who could keep information secret and perpetuate superstitions, in a "ritual annually renewed", so as to keep people away from nuclear sites. Van Wyck has delved into the intricate connections between nuclear waste disposal, cultural memory, the long-term communication challenges, offering critical insights into the ethical and cultural dimensions of nuclear semiotics (2004). In *Signs of Danger: Waste, Trauma, and Nuclear Threat* the author examined the challenge of establishing a warning system to protect future generations from this hazardous material, approaching the topic from a communication and cultural perspective, combining Deleuzian concepts with the real and virtual nature of nuclear threats (van Wyck 2005). By bringing poststructuralism and risk studies together, van Wyck offered an interdisciplinary perspective on environmental dangers, echoing the urgency and complexity of the problem. His explicit focus on ethical and cultural dilemmas pivoting around nuclear waste has opened up new perspectives and prompted invaluable discussions within the domain of nuclear semiotics. Lastly, Eglė Rindzevičiūtė's research has focused on the politics and societal implications of nuclear waste communication. Rindzevičiūtė's contribution on the Nuclear Cultural Heritage project allowed me to see how the nuclear presence can be dealt with through heritage studies, providing ways of responding to pressing challenges experienced by nuclear nations, such as the management of nuclear waste and military arsenals, the future of the nuclear energy industry, and the need to reassess the wider social and cultural legacy of the nuclear past (Rindzevičiūtė 2022). Most importantly, to achieve that and to avoid blindness to inequalities, injustices, and limits, new actors could be introduced in the heritage-making process: contemporary artists and creatives (23). Artists, especially in postcolonial contexts, where creative practitioners engage with no longer useful industrial infrastructures and disempowered communities (Dovydaityte 2020; Volkmar 2022), can also navigate different professional fields, making space for dialogue and introduce new ways of communicating and articulating the values of the nuclear past (Carpenter 2020).

Collectively, these scholars have significantly deepened our understanding of nuclear semiotics, providing insights into effective ways of communicating and addressing the long-term hazards of nuclear waste repositories, which are spaces organised and designated to communicate the risks associated with the site. These are classified based on their approach to controlling access, either by keeping potential visitors out or by allowing them in: this classification includes sites that do not explicitly prevent entry and those that do not fully grant access. For instance, Mazzucchelli and Paglianti (2022) ascribe the Onkalo site in Finland as having adopted a strategy of making disappear every possible trace of the geological repository, consequently interpreting the site as a "place of forgetting" (26) or, as Danish

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[1]   See https://www.theatomicpriesthoodproject.org/.

director Michael Madsen describes the site in his documentary *Into Eternity* (2010), "the place we should always remember to forget". On the contrary, the French Agency for Nuclear Waste (ANDRA) has adopted a different solution. In April 2015, ANDRA invited artistic project proposals on "imagining the memory of radioactive waste storage centers for future generations". These proposals, whether realistic, utopian, or critical, aimed to contribute to ANDRA's reflection on capturing and transmitting the memory of radioactive waste sites. Notably, these ideas were not obligated to be carried out, emphasising the exploration of diverse perspectives in shaping the narrative for the benefit of future generations.[2]

One of the participants, visual artist Cécile Massart, has dedicated her efforts to the development of temporary marker structures that can undergo transformation across generations and responded to a call for ideas issued by ANDRA for the *Bure Depot*.[3] By addressing the isolation of different kinds of nuclear knowledge, Massart's series of seven prints visualise a conceptual proposal for an architectural marker, specifically *Laboratories* **[fig. 1]**, to be located within the perimeter of waste storage sites to facilitate multidisciplinary research on nuclear issues for the future. While hosting biologists, scientists, artists, and archaeologists, these laboratories could become the space where knowledge of the place, together with memory, would be maintained, translated, and transmitted through generations.

I had the opportunity to interview Cécile Massart and delve into her perspectives on community involvement and democratic spaces within her *Laboratories* project. I asked her how she planned to involve individuals from different backgrounds in her installations. Cécile responded, "All people are free to participate. The aim is to try to live with radioactive waste (and not only radioactive waste) in the future. It is our generation that produces them for a comfort that has never been equaled. For decades, engineers have been developing ways of making the living world safe. We must integrate this, but also be able to express our fears, our disagreements, our reflections on the very nature of the earth and our incomprehension". Furthermore, I inquired about her thoughts on creating a truly democratic space for sharing. Cécile expressed, "It is a situation that impacts future generations that we do not know, so we are all involved, small and large, migrants, climate refugees, right or left, to ensure some form of ethics, at best, knowledge of the subject to future generations in nuclear countries and find the appropriate communication".

Cécile's responses provided valuable insights into her vision for the *Laboratories* and their inclusive nature: her emphasis on freedom of participation and the need for open dialogue regarding radioactive waste demonstrated her commitment to involving diverse voices. Additionally, her

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2 See https://www.andra.fr/nos-expertises/conserver-et-transmettre-la-memoire and https://www.andra.fr/nos-expertises/conserver-et-transmettre-la-memoire/lart-et-la-memoire-des-dechets-radioactifs.

3 Bure is a municipality in France where, in the year 2000, ANDRA initiated the construction of an underground laboratory. This facility was established to explore the feasibility of geological storage in the argillite layer of the region. Over time, the laboratory has evolved into a space dedicated to conducting studies and tests essential for the Cigéo project. Cigéo aims to store Long-lived medium-level waste (MA-VL) and High-activity waste (HA) in a secure and controlled manner. The underground laboratory at Bure serves as a critical research and testing ground for advancing the objectives of the Cigéo project. See https://www.cigeo.gouv.fr/chiffres-cles-de-cigeo-et-du-stockage-des-dechets-nucleaires-135.
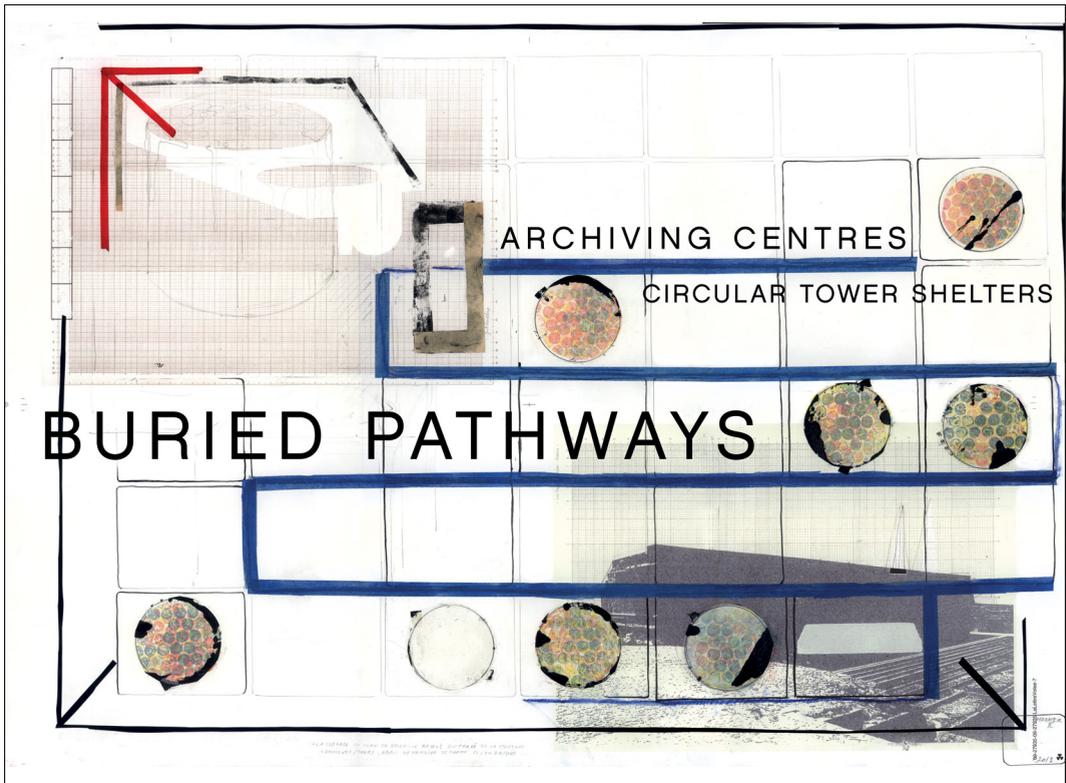
Figura 1 Cécile Massart, "Buried Pathways", from the series *Laboratories*. 2013. Printed on paper, 63 × 90 cm.
Courtesy Cécile Massart

perspective on the impact of the nuclear situation on future generations and the necessity of ethical communication highlighted the importance of creating democratic spaces for knowledge sharing. By incorporating these firsthand quotations from Cécile's interview, I was able to gain deeper insights into the role of community building and democracy within her artistic project. These perspectives enriched my research, shedding light on the potential of art to engage diverse audiences and address nuclear challenges effectively.

3   The Shift Away from Nuclear Power in Italy and Challenges in Waste Management

Following the 1987 nuclear referendum, nuclear power programs have been halted in Italy, leaving the field clear to increased production and import of natural gas as a source of energy. The causes for the decrease in nuclear development after 1985 concern a series of events with global-scale effects. Among them, the most important one is the increase of interest in oil after 1980 and the Chernobyl nuclear accident, which profoundly transformed how countries worldwide viewed nuclear power (Albino et al. 2014; Prăvălie, Bandoc 2018). In this context, Italy became the first country to go back to a 'non-nuclear energy' status. Two other states followed its lead and

abandoned their nuclear reactors in the following decades, Kazakhstan in 1999 and Lithuania in 2009 (Schneider, Froggatt, Thomas 2011).

The responsibility for nuclear and radioactive wastes and reactor and fuel cycle decommissioning is owned by SOGIN (Società Gestione Impianti Nucleari). The decommissioning strategy adopted in 1990 envisaged the end of the country's nuclear power program and the complete decommissioning of nuclear facilities by 2020, however, the deadline was moved to 2024. Initially, SOGIN (2022) was established to dismantle the power plants of Trino, Latina, Caorso, and Garigliano and with time the dismantling program was extended to other facilities, such as research centres owned by ENEA). SOGIN is also the company that studies the Italian territory to identify, construct, and operate the national near-surface repository to host various types of waste (Low-Level Waste, Intermediate Level Waste) definitively and to temporarily store High-Level Waste until its final disposal in a deep geological formation. According to the time schedule for its realisation, the depository will be operative around 2030, while the vitrified waste will return by 2025.

The discrepancy between the progress of the work and the approaching deadline led to the consideration of two possible scenarios: new agreements to postpone the return of wastes or the improvement (or construction) of new repositories in the existing nuclear sites to store them temporarily (Testoni, Levizzari, De Salve 2019). In 2020, sixty-seven sites were identified in Italy as potentially suitable for hosting a repository (SOGIN 2020). However, a study from Borgogno-Mondino, Borgia and Cigolini has highlighted how the procedure followed by SOGIN has shown significant weaknesses and criticalities, lacking in open data utilisation, and proving that all spatial concerns are based on a "very limited number of data" (Borgogno-Mondino, Borgia, Cigolini 2021, 3). The study focused on the Torino Metropolitan district or TO-10 site (Piedmont region, NW Italy), placed at the top of SOGIN's compiled list, and has shown how the site was not suitable for hosting a safe, long-lasting nuclear repository (19).

4 Toxicity and Waste in Contemporary Art

What has an artist to do with all that is left behind? Waste has become a significant theme in contemporary art, offering insights into the global capitalist forces that shape our world and contribute to environmental degradation (Davis, Turpin 2015; Gray, Sheikh 2018; Boetzkes 2019). For theorist of contemporary art and aesthetics Amanda Boetzkes plastic can be interpreted as a symbol of pollution, artistic medium, and eco-cultural signifier, arguing that plastic makes oil capital visible as a cultural agent (Boetzkes 2019). In *Plastic Capitalism* Boetzkes suggests that contemporary art contributes to ecological consciousness, challenging the dominance of capitalism in addressing environmental crises. Nevertheless, the book does not explicitly address the continued involvement of companies, such as those engaged in neoliberal philanthropy,[4] in funding international museum infrastructure

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[4]   Scholars have utilised the work of Gramsci to demonstrate how philanthropy, as a part of civil society, preserves capitalist hegemony by masking wealth concentration and exploitation, acting as is a tool for elites to maintain their political dominance through consensus rather than

and biennial events (Snow 2020). This omission raises questions about the potential tensions between the transformative potential of art and the entanglement of the art world with corporate interests, a critical aspect that warrants further exploration in the dynamic relationship between contemporary art, capitalism, and ecological consciousness.

In the broader field of art related to waste, nuclear waste stands out as a captivating and intellectually stimulating subject matter. Following the bombings of Hiroshima and Nagasaki, some artists and painters developed a unique artistic approach known as nuclear art. As noted by historian of nuclear technology, Robert Jacobs, art and popular culture have exhibited a unique ability to transcend the inherent challenges posed by nuclear issues and the profound implications of nuclear weapons (Jacobs 2010). Artists, despite grappling with the daunting task of encapsulating the horrors and power associated with nuclear waste, akin to the challenge of representing the divine in religious art, have produced numerous creative works that explore this theme. Nowadays, the Nuclear Culture Research Group[5] plays a pivotal role in this domain. Composed of artists, curators, and scholars specialising in nuclear arts and humanities, this interdisciplinary collective operates as part of the broader Nuclear Culture research project, which seeks to advance artistic and curatorial exploration of nuclear culture, both within the United Kingdom and on a global scale. Ele Carpenter leads this initiative in partnership with Art Catalyst, who has curated several exhibitions exploring the multifaceted aspects of nuclear power, using art to illuminate the societal, environmental, and cultural dimensions of nuclear energy and waste. *Actinium* in 2014 called for vigilance about nuclear impacts through art in Japan. *Material Nuclear Culture* in 2016 focused on UK nuclear submarines, examining preservation challenges and offering unique perspectives. *Perpetual Uncertainty*, a traveling exhibition, explored the complex bond between knowledge, radiation, and deep time. In 2020, *Splitting the Atom* in Lithuania discussed various aspects of nuclear power, from resource farming to disarmament.

In sum, the exploration of waste in contemporary art, as exemplified by Boetzkes's examination of plastics, and the thematic focus on nuclear energy in curated exhibitions by Ele Carpenter both demonstrate how art serves as a critical medium for probing complex global challenges and encouraging dialogue about the intersection of capitalism, environmental concerns, and societal perspectives.

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force (Karl, Katz 1987; Fontana 2006; Morvaridi 2012). Furthermore, racial neoliberal philanthropy highlights how this is a racialised process as well (Saifer 2023).

5 See https://nuclear.artscatalyst.org/.

5 The Italian Experience with Nuclear Art: *Art Spaces. Nuclear Decommissioning. Art at the Service of Future Generations* Exhibition

To inform local communities and stakeholders about the planned and ongoing activities on nuclear decommissioning, with the aim of making them more transparent and accessible to the public at large, the JRC Nuclear Safety and Security department commissioned and held the exhibition *Art Spaces. Nuclear Decommissioning. Science at the Service of the Future Generation* in their ISF. From 29 September to 15 October 2017, 52 artists coming from different backgrounds were hosted in Ispra's ISF to present to the public their artworks related to the nuclear decommissioning and radioactive waste management program. The artworks shared the same starting point, the drum, which was used by artists with different modes of expression to convey a message related to the exhibition's message. Later, the exhibition became itinerant and reached its fourth edition in Italy (Ispra, Masnago-Varese, Venice, Genoa). The opening exhibition was held in Ispra's ISF. As Italy's first nuclear reactor, Ispra-1 operated from 1959 to 1973 at the Ispra Nuclear Research Centre. It played a vital role in studying core physics, materials for commercial reactors, neutron fluxes, and their effects on living organisms. In 2018, the Italian government entrusted the decommissioning of the reactor to SOGIN, which also manages the radioactive waste generated by the reactor. This waste is temporarily stored at the ISF in Ispra until the completion of Italy's national nuclear waste repository. Moreover, ISF was a space-event where people working in different fields met. According to the artists, the space aided participation, as well as allowed artists, JRC workers, and the public to connect. From the information gathered in a survey, when asked about the training received by the artists and their perception of the shared performance space, they recalled how they had been involved in an informative meeting where they were given a comprehensive explanation of the work being conducted at Ispra: technical examples were provided to ensure a thorough understanding, and even individuals without specialised knowledge were able to grasp the storage methods for waste and gain some insight into the research activities taking place at the facility.

The research utilised semi-structured online interviews to delve into the participation, viewpoints, and interpretations of artists who submitted artworks for an exhibition. The diverse backgrounds of participating artists led to varying perspectives on the exhibition's theme: while some artists had connections to the Varese territory, where the JRC is located, others had no direct experience with living near nuclear plants. The interviews covered a range of topics, including personal connections to nuclear environments, experiences working with *Art Spaces*, challenges and opportunities encountered when working with waste materials, and the artistic methodologies employed to represent radioactivity. The discussions also touched on critical observations, doubts, scepticism, and hopes regarding the use of nuclear energy. Their testimonies offered an outlook on how to deal with and think about nuclear contamination, together with opening up a discussion on security and slow violence (Nixon 2011), the relationship between technology and art, environmental sustainability, power dynamics and economic imbalances, new ways of thinking about waste, and what happens when radioactive waste becomes part of our culture, or becomes part of the nuclear heritage.

During the interviews it emerged that the artists were not completely aware of the potential of their artworks and participation in the exhibition as a first step towards entering the construction of an Italian nuclear cultural heritage, or towards opening the discussion on nuclear knowledge with the public at large. This lack of reflection on this point can probably be attributed to two reasons. Firstly, the purpose of the exhibition was not to focus on the nuclear archive itself, but rather on the decommissioning processes which are ongoing in Italy. Secondly, none of the artists were aware of the Nuclear Cultural Heritage project. Nevertheless, it was possible to initiate a reflection on archiving practices, although only two artists engaged in dialogues that sparked interesting aspects about it.

One noteworthy example is Gianni Macalli, who worked on *The Refuse Light* **[fig. 2]**. Macalli, who also holds the role of a professor at various educational institutions including high schools and the Academy of Fine Arts in Crema, Bergamo, and Brera, provided insightful explanations during the interview. The underlying intention behind their artwork, as Macalli elucidated, lies in "exploring contemporaneity" by considering the drum as a symbol of waste, thereby carrying a significant thematic weight. Macalli further acknowledged that a container can both conceal and reveal reflections on something perilous. The artist's primary objective, as emphasised, is to strive towards a "regeneration of a new nature" through the exploration of novel materials, components, liquids, and solids, intending to "present a

new image, a reflection where art or represented concepts invite questioning and contemplation on the subject". During the discussion on the potential of *Art Spaces* serving as a future artistic archive for nuclear waste, Macalli conveyed the belief that the path to achieve this goal lies in "bridging the gap between everyday life and nuclear memory". According to the artist's viewpoint, "the archival process of radioactive waste should become integrated into daily life, enabling a connection between the historical and the domestic, the monumental and the personal".

As the artist pointed out, "embedding the radioactive presence in a social context will facilitate its acceptance. For this, contemporary art may prove useful in achieving the goal". This perspective, shared by other artists in their interviews as well, aligns well with the broader context of heritage-making, specifically in relation to nuclear cultural heritage. Leveraging contemporary art, while ensuring inclusiveness and promoting constructive dialogue, can serve as an effective communication tool to make complex, ambivalent, or divisive issues more accessible. This approach acknowledges the importance of incorporating nuclear heritage into societal discourse through artistic mediums that actively engage the public. By utilising contemporary art, artists aim to create a platform for understanding and reflection, fostering a sense of acceptance and dialogue surrounding nuclear issues. Such an approach acknowledges the potential of art as a means to bridge gaps and encourage a deeper engagement with the complexities of nuclear heritage.

The second example is *For Ever and Ever* by Fausta Squatriti. Born in Milan, she started her artistic research at an early age. During the interview, the artist referred mainly to the tension between life and death, and the conversation with the artist focused on burials, being beneath the ground, and disposal of radioactive waste as if we were talking about funerary practices. As I wanted to understand the steps of making the piece itself, I asked about the choices which led to the creation of the artwork. As the artist explained, "I cut it in half, in a vertical line, and that half I immersed in the whiteness of chalk, a material that refers to the white lime with which corpses were disinfected in mass graves. A drum designed to last for millennia is cracking, the protections put in place are falling apart, tombs coming to light". The introduction of another material, chalk, makes on the one hand visible what is hardly perceptible and, on the other hand, creates a symbolic bridge with meanings related to the theme of death. Indeed, when asked about waste, the artist used metaphors of this kind: "Waste is protected in concrete casings, buried like a corpse that you never want to see again, but until then can you fill the subsoil with drums containing radioactive waste? Until when will it remain intact?".

According to French philosopher Marcel Lefebvre (1991), ideas are affirmed in space and in turn give rise to new mental patterns. This sentiment sets the stage for the artist's exploration, where imagined 'graves', or waste deposits, are likened to 'corpses', or radioactive waste. In this spatial configuration, our mental realm generates a field in a tangible environment, leading to a perception of psychological and spatial division relating to the unseen waste disposals seen as 'graves'. In the dimension of 'beneath', there are the hypothetical images of vertical structures 'above' the surface: buildings and houses correspond to sewage systems or bunker systems, and nuclear power plants' nuclear waste depositories. Beneath are structured like tentacles or rhizomes, hidden from the eyes of those who inhabit the

surface. One of these structures is Onkalo, a monumental underground nuclear waste repository in Finland. To avoid chances of high-dose radiation being exposed to living organisms, the bunker has to be sealed for 100,000 years: what is contained in the bunker, and the bunker itself, will go beyond the scale of human time, losing itself in the toxic unconscious. Focusing on the architecturally constructed cave, Atsuhide Ito (2016, 481) argues that it is a "radioactive underground rhizome", which "disqualifies the notion of an architectural monument as a triumphant technological achievement to manage height". In Ito's analysis of the cavernous space, hidden from the public and out of reach from authority and law, the cave is the place of crossing boundaries between life and death.

Caves, waste repositories, bunkers, and burials at large have to undergo a process of beautification: mourning has to be domesticated. According to environmental historian Marco Armiero, the domestication of memories, plastically built, "goes hand in hand with the fabrication of toxic narratives" (Armiero 2021, 21). Contrarily, it is essential to take into consideration another dominant narrative, which should highlight memories and subjectivities wasted out of history, and highlight how that narrative functions to justify that very exclusion. I'd argue that this claim resonates with Antonia Rigaud's analysis of Robert Smithson's Land Art creations in Australia, or 'new monuments', which are subverting the classical notions of "monumentality as verticality" and that rather "monumentalize what is traditionally anti-monumental, or even non-material" (Rigaud 2012). The underlying thread that connects and influences our architectural design and control of nature is the idea of spatial construction: this construction weaves in directionality and the creation of meaning within landscapes and poses boundary issues concerning the appropriation of nature (Rigaud 2012). The investigation reveals two spatial realms: the prominent realm of 'verticality' and 'above' leaning over the realm of the 'rhizomatic' and the almost secret references whispered to 'the underground'.

Having discussed the grey area between the visibility and invisibility of waste depositories as 'graves' or the symbolic 'underground', solutions to mark their existence have proven fascinating and challenging. Their perceived enigma echoes in the eloquent perspective of author Darren Jorgensen. Jorgensen, who has concentrated significantly on indigenous art forms, introduces a unique, yet often contested approach to mark and denote these "underground graves". According to Jorgensen, one of the commonly proposed solutions to signal and mark underground nuclear waste dumps are "giant monuments: massive concrete structures, surrounded by rings of monoliths inscribed with the signs of death" (Jorgensen 2009). Yet, this overwhelming endeavour to make an unseen danger tangible often leads to failed interpretations: remains of ancient civilisations have been dug up by professionals and not alike, and structures built to be difficult to get to or to avoid attention have been discovered, reached, and, most of the times, not understood by visitors. Such unwanted revelations only stress the fact that problem-solving in this realm is not as simple as setting up warning systems. By addressing these issues, not only does Jorgensen point out how the human condition has changed over the centuries, but also the tight relationship between monuments and power. These, as per Jorgensen's description, often stand as memorable testaments to the "ruling classes who are anxious not to be forgotten, or at the very least to appease the gods that lie in wait for them after their death" (Jorgensen 2009). Thus, Jorgensen's

perspective, coupled with the commentary on Rigaud's understanding of monuments, embellishes our analysis which centres around exploring the tension between visibility and invisibility when interacting with waste lucidly symbolised as 'graves'.

In conclusion, to achieve a signal design that will last for at least enough time continuous work is essential. This goal could be reached through the creation of Cécile Massart's *Laboratories*, or by bridging the gap between day-to-day life and nuclear presences, but also by moving from verticality to beneath, and likewise from the centre to the margins. In this way, one could move from the 'wasting relationships' described by Armiero, letting the subaltern enter the nuclear discourse. To facilitate this rapprochement, as also advocated by the Nuclear Cultural Heritage project, artists and their work may be needed.

6 Conclusions

Making sense of these toxic and radioactive legacies turned out to be a complex task, as it is difficult to predict the future activities of humans and materials, whereby a highly imaginative process and constructing a future narrative is necessary. Accomplishing the right archiving method is essential to consider different fields at the same time: the structural forms of permanent markers, the establishment of public records and archives, and governments' regulations regarding land and resource use, together with other methods of preserving knowledge about the location, design, and contents of a disposal system (Joyce 2020). The result should be "imposing, impressive, yet unattractive" and "menacing" enough to transform a radioactive waste site marker into something more than a place, transforming it into a message (Joyce 2020) for future generations. Art practices could play a critical role in creating new discourses around nuclear presence and radioactive waste, one that is closer to social issues of "nuclearity" (Hecht 2010). Although arts-based approaches are not a definitive solution, they can bring benefits to discussions, research, and the development of diverse knowledge practices. To be effective, they must be transformative and inclusive, representing everyone without replicating oppression but serving as a bridge between experiences and imagination. While the main objective of *Art Spaces* was not to convey messages for the future creation of nuclear archives, the presented artworks have the potential to initiate reflections on the nuclear situation in Italy. Through visual arts, a nuanced exploration of nuclear representation, site, scale, materiality, and inheritance can uncover hidden layers of our shared existence, including knowledge creation, nuclear legacies, and economic cycles.

Through the testimonies and data that emerged from the interviews with Italian artists, it was possible to open up a space for discussion on issues related in a more or less visible way to nuclear decommissioning: contamination, security, power, and economic imbalances, and relations between science, technology, and art. In particular, Macalli's *The Refuse Light* has shown how by integrating radioactive presence into a social context through art, the goal of acceptance and deeper engagement with nuclear issues can be achieved, making them more accessible and facilitating a connection between personal experiences and historical significance. Lastly, in Squatriti's *For Ever and Ever*, deep geological repositories of radioactive waste

were read also as burial sites: these spaces offered ways to think about vertical structures and rhizomatic labyrinths beneath, together with the relationship between monuments and power. I would argue that communication through artistic language has made it possible to approach topics that may seem difficult to decipher or to tackle them through alternative ways than those of technical-scientific language.

Art Spaces has been a first step, but it was not a space for contestation or dialogue where communication about nuclear knowledge occurs. Instead, it is a space where it is observed. Opening Ispra's ISF to the broader public constituted a moment of (re)connection with the community of citizens or visitors, but there was not a real exchange between the 'insiders' and 'outsiders'. More than offering an exhibition to the public with the role of observer, in a top-down approach, radioactive waste storage sites should strive to become spaces where real interdisciplinary is built. If it is fundamental to halt the material flow of radioactive waste for environmental well-being, nuclear knowledge should remain uninterrupted, accessible, shared, and inclusive.

In considering steps forward, one potential solution for Italy is to adopt methods similar to those employed by France, which involve incorporating art into the discourse surrounding nuclear archives and the disposal of radioactive waste. This approach encourages engagement with local communities and various stakeholders, facilitating a broader understanding of nuclear issues. An exemplary initiative in this regard is Cécile Massart's *Laboratories*, which has effectively utilised art to address these concerns. Additionally, although the Italian territory was not examined in the Nuclear Cultural Heritage project, the concept of nuclear cultural heritage-making holds promise as a means to confront and address the legacies of the nuclear past. This approach recognises the significance of actively engaging with and preserving nuclear heritage in order to promote understanding and dialogue surrounding these complex historical issues. By utilising various cultural practices and interventions, nuclear cultural heritage-making offers a potential pathway for Italy to navigate its nuclear legacy in a meaningful and constructive manner. Lastly, considering the promising findings, expanding our research could involve exploring the perception of communities near the ISF to gain deeper insights and create more accurate mappings. Engaging with Ispra site workers and decommissioning experts would open a dialogue and offer alternative perspectives from labourers, technicians, and specialised individuals.

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Metaspore: Cosmopolitical Biopolitics and Multispecies Potentialities in Anicka Yi's Ecoart

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Abstract   Anicka Yi's exhibition *Metaspore* at Pirelli HangarBicocca showcased her bioart and ecoart pieces, using living organisms and AIs to explore symbiotic relationships in the world. The exhibition used the concept of spores and mycelium networks as a metaphor for art's ability to inoculate and distribute collective intelligence. Yi's 'biopolitics of the senses' aimed to overcome sensory bias, sculpting air with fragrances and reconfiguring what it means to be human in a cosmopolitical way. By portraying the pluriverse of microbes and machines, the exhibition challenged our perception of non-human and more-than-human entities in the world.

Keywords   Cosmopolitics. Ecoart. Spores. Biopolitics. Synesthesia. Speculative practices. Networks.

Summary   1 Introduction. – 2 Attuning to the Sense of Olfaction. – 3 Flowing Through Membranes. – 4 Becoming 'Biotechnocultural' Bodies. – 5 Conclusion.

1   Introduction

In 2022, the Milanese foundation Pirelli HangarBicocca hosted artist Anicka Yi's first solo show in an Italian institution. The exhibition was a survey show that portrayed Yi's pieces from over a decade as well as new ones made for the occasion. In her work, the artist delves into the intricate connections between biological processes, technology, and human perception. Her fascination with the underlying structures of microorganisms and machines serves as a foundation for her ecoart explorations. Here, the aim is to disclose a wider perspective that encompasses "preservation, understanding, and appreciation of the earth's ecology" (Giannelli 2021).

The intersection of science and art laid the groundwork for the exhibition's title, *Metaspore*. It is a neologism that encapsulates Yi's artistic practice in two ways. Firstly, spores are the reproductive cells of microorganisms such as fungi, microbes, and bacteria. They grow in the microorganism's

filamentous structures called 'hyphae'. These formations combine and develop into a dense and intricate colony known as 'mycelium': an unending organic matrix expanded from the aerial propagation of spores. Each time a spore lands, it embodies a new node in the mycelium, enlarging this collective that resides within the soil and interlinks all elements through a "collective swarm intelligence" (Yi 2022b). Secondly, the 'meta' prefix in the title indicates the metaphorical new dimensions these spores can lead us to, beyond reality as we know it, through engagement with art. One of these dimensions stems from how Yi seamlessly integrates technology and machines as well, mirroring the Internet's role as a digital mycelium that knits together a virtual landscape. Essentially, Yi describes her practice as an intricate process of inoculation where art can "inject our minds and bodies", especially in ecoart practices that engage with different kinds of materials (Yi 2022a).

Drawing inspiration from the metabolic processes depicted in works like *Le Pain Symbiotique* (2014) and *Skype Sweater* (2010-17), a conceptual framework emerged to characterise Yi's artistic approach: I define this framework 'cultural fermentation'. Like microorganisms breaking down matter, Yi dismantles norms to inoculate and propagate fresh interpretations. The goal in Yi's project is to question the hegemony of Western culture, sparking discourse and reflection on topics filled with sociopolitical connotations, such as identity and alterity. 'Cultural fermentation' as a concept is inherently cosmopolitical due to its emphasis on interconnectedness, inclusivity, and the disruption of established hierarchical and biopolitical divisions. Indeed, within the theoretical framework of cosmopolitics, the focal point is recognising the interdependence among all entities, delving into the consequential political and social ramifications arising from these connections (Latour quoted in Vich-Álvares 2022, 35). Ultimately, the aim is to foster a more inclusive and equitable perspective on cultural and societal interactions.

In my first visit to the exhibition, I observed that the presentation of works formed a cohesive narrative exploring the interconnected relationships between humans, non-human entities, and the environment at large. For this reason, and to more effectively communicate the interconnected concepts explored by the artist, a more detailed exploration of the exhibition's themes has led me to reorganise the exposition of the artworks in this essay. By defining Yi's practice as a process of 'cultural fermentation' and engaging with rhetorical figures, my intention is to offer a more conceptually unified involvement with Yi's artworks.

The artist utilises mycelium to shape new forms of thought through the attribution of new meaning. Indeed, microbes' ways of being reveal possible, alternative methods of coexistence. Yi utilises this as a language to shape new significance in our present-day collective existence. The techniques she uses in the framework of 'cultural fermentation' are similar to rhetorical figures. In particular, in this essay I will analyse how her oeuvre resonates deeply with the figures of synesthesia, metaphor, and antiphrasis.

The first section will be dedicated to a synesthetic study of the pieces *Immigrant Caucus* (2017) **[fig. 1]** and *Auras, Orgasms and Nervous Peaches* (2011) to see how the sense of smell can help us recentring our sensorium in a time where we rely almost solely on sight and hearing. The second section will engage with the works *Shameplex* (2015) and *Quarantine Tents* (2015), exploring ways to dissolve and flow through membranes, physical

Figure 1 Anicka Yi, *Immigrant Caucus*, 2017. Installation view, Pirelli HangarBicocca, Milan, 2022. Courtesy of the Artist, 47 Canal, New York, Gladstone Gallery, and Pirelli HangarBicocca, Milan. Photo by Agostino Osio

and metaphorical, to rebuild our perception on new paradigms that move past bodily divisions such as internal/external or male/female. The third and last section of the essay will use antiphrasis to delve into the pieces *Releasing the Human from the Human* (2019-20) and *Biologizing the Machine (Spillover Zoonotica)* (2022). This last part investigates the relationship between ancient organic and new mechanical bodies, looking into how these non-human entities contribute to human life.

Considering that "there are 1,000,000,000 times more bacteria in the world than stars in the sky" (Curtis quoted in Raffaetà 2023, 3), we are mistaken to think of them as a world or even as a universe. They embody rather a pluriverse, where "each territory of entities is populated by distinct possibilities, qualities, and obligations" constituting a "buzzing" dimension of ramifications (Robbert, Mickey 2013, 3). Yi extends this vision to create her own pluriverse of microbes entangled with tools, machinery, bodily fluids, fabrics, materials which "acknowledge that multiple ontologies exist" (Carbonell 2022, 187), in a cosmopolitical way. In fact, in the pluriversal canvas that is *Metaspore*, there is no ambition to portray the centrality of the human, but rather to place it as an equal component of the network of life, in a way that the "human is melted in the solution, present only in the connections" (Bourriaud quoted in Di Rosa 2022, 111). At the same time, the human dimension is of major relevance despite the lack of anthropomorphic elements. In fact, all anthropogenic elements are soaked with human values: the symbolic meaning they have is rooted in a sociocultural and political human framework. What Yi does is to project these values into a different,

expanded, and evolving microbiological horizon. This essay explores how Yi, in collaboration with her creatures, sheds new light on foundational sociocultural values, revealing their transformative potential.

2 Attuning to the Sense of Olfaction

Metaspore opened up with an entry point to the exhibit: *Immigrant Caucus* (2017), a two-part installation comprising a metal mesh gateway and a trio of industrial steel tanks releasing a distinct aroma. During my visit, I initially mistook this installation for a permanent exhibit, and felt compelled to physically engage with its elements. My inability to immediately comprehend their function elicited an immediate sense of unease. The tanks spread a unique odour blend, a composite of human sweat samples sourced from labourers in Manhattan's Chinatown and Koreatown, combined with pheromones from carpenter ants (Aspesi, Griccioli, Leuzzi 2022).

Yi arguably connected the two smells in a simile, matching the buzzing world of the Asian-American neighbours of New York with the tunnel-digging ants. In Western societies, ants are often associated with positive attributes like industriousness and unity. Their body emissions serve as functional tools to ensure the cohesion of their social structure, allowing them to orient in space and to keep away threats. On the other hand, the contrast with marginalised communities is striking: workers from the aforementioned neighbourhoods often experience avoidance, exploitation, and neglect. Symbolically and literally, their bodies and the associated smells are pushed to the margins of social acceptance. The piece not only draws attention to these disparities but also challenges the viewer to reflect on the cosmopolitical interplay between cultural perceptions and social hierarchies.

Extending the simile further, Yi's political critique goes deeper. The word "caucus" refers to a closed meeting of people who belong to "the same political party or faction".[1] This pairing provides an impactful opening towards a world that is moving and changing, a multispecies and trans-species dimension which advocates for a "paradigm shift" (Aspesi, Griccioli, Leuzzi 2022, 16). Indeed, Yi has stated that

> Perhaps the trans-species scent could move one past the way things merely appear to us, a relative mode of reality, and instead allow us to access something more universal. (Yi quoted in Aspesi, Griccioli, Leuzzi 2022, 16)

Right after I crossed the threshold of *Immigrant Caucus*, I found myself looking at the left corner of the huge room, where stood inconspicuously the piece *Auras, Orgasms and Nervous Peaches* (2011). Barely lit and covered in black, the installation consisted of four walls, featuring an archway on one side that opens onto a white tiled floor. On the outer walls of the block were three leaky holes spewing a yellow liquid that flows on the surfaces of the chamber. There was one mediator standing right next to the piece to explain that it was not, in fact, a restroom. After spending some time on the side listening to the fluid's almost imperceptible flow, I decided to

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[1] https://www.merriam-webster.com/dictionary/caucus.

move in front of the archway. Inside, the room looked dark and ominous, with tiny mold formations on the tiles and the yellow liquid flowing on the inside too. There came back that feeling of uneasiness from not being able to make sense of what was in front of me – could the liquid really be urine? Sight and hearing could not help me, but they prompted me to try something different. I got closer to smell the fluid and I instantly recognised it – its scent unmistakably that of olive oil. The recognition instantly transformed my perception. There, a synesthetic experience unfolded, binding different sensory modalities. Sight and sound initially provoked ambiguity, intensifying my intrigue. Yet, it was the integration of the olfactory dimension that catalysed a shift in perception. The synesthetic encounter, triggered by the fluid's scent, aligned with the initial unease, reshaping it into curiosity. The transition from discomfort to wonder showcased how our understanding can evolve through multisensory engagement. This interplay of senses underscores the importance of synesthesia in expanding interpretations, ultimately enabling us to approach different elements with greater receptivity.

With these two initial pieces, Yi wanted to alter the perception of two bodily fluids normally regarded as unpleasant. She deconstructs cultural connotations through the reconsideration of behaviors that attribute meaning to "physiological actions such as sniffing, eating and digesting" (4). While the notion of sweat may initially evoke discomfort, the tanks in *Immigrant Caucus* invite viewers to reframe their perspective, acknowledging it as an intrinsic and natural aspect of human existence. The once-unpleasant aroma now emerges as a testament to human vitality, prompting a newfound respect for the human body and recognising its complex interactions with its environment. In a similar way, the soothing auditory backdrop and the olfactory experience of *Auras, Orgasms and Nervous Peaches* intertwine and challenge our perception of urine. In fact, the sensory fusion prompts a contemplation of alternate values, dismissing the idea that urine is just a waste product. The distinctive journey offered by the liquid enables us to appreciate this bodily fluid that we produce involuntarily, to respect it as the vital function that it represents.

The closeness connected to the experience of smelling is the reason why Kant deemed olfaction as inferior to the other senses, precisely for its "intimate and involuntary nature" (Kant quoted in Yi 2022b). What Kant criticised is what Yi avenges: smell invites us to recognise our vulnerability, permeability, and most importantly our perishability, to embrace a circular and symbiotic relationship with the world.

3 Flowing Through Membranes

Turning around from the left corner and walking towards the centre of the hangar, I found myself surrounded by five rectangular transparent instalments. Made of PVC installations, this series was *Quarantine Tents* (2015). The exterior symbols on the tents recall the biological hazard sign, while in their interiors lies an array of diverse materials, entities, and fragrances. This piece reflects on two main themes adopting the same method: the metaphor.

Inside the tents, scent diffusers release a specially crafted bacterial fragrance composed of samples taken from a hundred women's intimate parts,

sometimes their vaginas (Thaddeus-Johns 2022, 4). Simultaneously, motorcycle helmets diffuse a smell created from air samples collected at the Gagosian Gallery in New York, a patriarchal symbol of the "art world's traditional manliness" (4). The two aromas carry heavy metaphorical meaning. On the one hand there is the feminine, embodied by the 'natural' scent of female bodies in their intimacy, on the other hand is the masculine, embodied by a place representative of a status symbol. The former recalls how the female body, despite whatever environment it is placed in, is often objectified and stripped of sociocultural values; the latter does quite the opposite, removing all natural connotations of the male body and representing it solely through the rhetoric of power. The sense of this juxtaposition is not immediate to understand, hence it induces discomfort. It is exactly in that discomfort that Yi portrays transformative potential. Unpleasant feelings like "disgust, astonishment or empathy" make us "rethink [our] categorial characteristics and cognitive limits" (Kerbe and Schmidt quoted in Vich-Álvares 2022, 43). In a graceful and subtle way, Yi is able to create a cognitive dissonance in the discourse, and through that small disruption new meaning leaks into our brain flowing across "materialities, but also across knowledge, disciplines and theoretical frameworks" (Pevere 2023, 11).

From the exterior of the tents is clear how the piece evokes "contemporary fears surrounding hygiene and contamination" (Aspesi, Griccioli, Leuzzi 2022, 11), in fact it was designed at the outbreak of Ebola. The epidemic changed the functioning of our own bodies, limiting "movement and interaction of living beings" (Yi quoted in Aspesi, Griccioli, Leuzzi 2022, 12). Through a complex metaphor, Yi questions our habit to divide and create boundaries. I believe the tents to be metaphors for bodies in a state of isolation from each other.

No matter how isolated though, these bodies still end up communicating with each other through scents navigating in the air. In the same way, the fusion of 'feminine' and 'masculine' scents allows the creation of a new, communal one that can even out the unbalance between the two and attune to a global vision. In such way, Yi challenges the arbitrary schism that splits interior and exterior, or the female and male body. She argues that this idea is artificial, and is built through "anthropogenic projections of boundaries" (Thaddeus-Johns 2022, 3).

Right next to the tents was the piece *Shameplex* (2015). It is composed of seven glass tanks disposed in two parallel rows, looking like both graves and incubators. The inside of each box is coated with phosphorescent green ultrasound gel scattered with iron pins, all illuminated by the glow of LED lights. Because the tanks are open, the pins are subjected to a perpetual process of oxidation, where they transfer their iron particles onto the gel and create new spots, colours, and shapes **[fig. 2]**.

Yi stated that the ultrasound gel in the tanks is a metaphor for the constrained female body that incubates life "vis à vis to the oxidizing patterns that stain the process" (Yi quoted in Aspesi, Griccioli, Leuzzi 2022, 14). Similarly to the metaphoric scent created in the previous work, *Shameplex* reflects on the biopolitics of control performed on feminine bodies when they are "overstepping their containers" (Thaddeus-Johns 2022, 4). In fact, "the feminized body, like feminized nature, was enclosed precisely so that it could be penetrated" (Wilk quoted in Thaddeus-Johns 2022, 4). To break free from this boundary constriction, women "have become expert at boundary dissolution" (4).

Figure 2 Anicka Yi, *Metaspore*. Exhibition view, Pirelli HangarBicocca, Milan, 2022. Courtesy of the Artist and Pirelli HangarBicocca, Milan. Photo by Agostino Osio

Shameplex holds great significance as it not only symbolises the liberation of the female body from constraints, despite the challenges that such liberation entails, but also extends as a broader metaphor encompassing all bodies. This exchange of matter and value transcends the conventional heterosexual paradigm of penetration. Consequently, the artwork becomes a cosmopolitical metaphor for being human, seamlessly intertwined with the environment in its essence. As a matter of fact, "on a microbial level, all bodies are a mess of teeming borders" (4).

4 Becoming 'Biotechnocultural' Bodies

In her cosmopolitical pluriverse, Yi gives agency to technology as well, in a way that machines and AIs are "intended to be neither servants nor enemies, but kin, a companion species" (Yi 2022b). These beings simultaneously become biological, technological, and cultural—"biotechnocultural" (Bates 2018, 9). This paragraph will avoid discussing the works in olfactory terms, it will rather question prevailing mindsets that emphasise divisions between bodies, particularly those between the 'natural' and the 'artificial'.

Releasing the Human from the Human (2019-20) serves as the most compelling exploration of our interaction with technology within the exhibition. Composed of a kelp derivative, this installation features six globular lamps. Each lamp is internally illuminated and encloses animatronic insects that move within the spherical space. Due to the lamps' transparency and the

internal light source, the presence of these insects is made evident solely through the auditory buzz of their metallic wings and the play of their shadows upon the kelp surface.

The primary strategy Yi employs to interrogate the roles and hierarchies governing human and non-human entities involves an engagement with different timescales. Yi chose to use algae because they are among the oldest life forms on Earth. They are vital for human survival as they contain the cyanobacteria that generate the oxygen we breathe (Yi 2022a). While still evoking the metaphorical flow of substance through membranes analised in the previous paragraph, Yi engaged with one more rhetoric figure here. By antiphrasis, *Releasing the Human from the Human* expresses an idea of freedom through the portrayal of physical confinement, its opposite.

In considering that the microbial agency of cyanobacteria operates on a geological timescale, we recognise the peripheral role humans play in the planet's history and survival. Simultaneously, the presence of animatronic insects within the lamps could serve as a representation of our potential future. However, for the observer, these bugs might easily be perceived as organic organisms. Once again, drawing from the conventional divide between organic and artificial, Yi reinforces how the realisation that the bugs are machines does not negate their reality or impact, making them all the more real.

With this project, Yi gives agency to more-than-human forms of intelligence to show how we are all part of a massive and symbiotic web of relations (Yi 2022a; 2022b). This piece clearly states how Yi engages with an entanglement of "microbiome, AI, and animal and plant consciousness, which sweep away the ideas of human exceptionalism" (Aspesi, Griccioli, Leuzzi 2022, 18).

Right next to it stood the most recent work by the artist: *Biologizing the Machine (Spillover Zoonotica)* (2022). The parenthetical subtitle combines 'spillover', indicating adverse consequences, with 'zoonotica', derived from 'zoonosis', which refers to the transmission of infectious diseases from non-human entities to humans.[2] The name's evocation of what happened with COVID-19 here is rather explicit. But Yi never fails to bring wonder and value even to an experience that was as traumatic as the pandemic **[fig. 3]**. The title portrays how she does so through antiphrasis: despite the negative repercussions implied in a spillover, in this work of art the contamination is harmonious, and highlights the creative potential of microorganisms cooperating with machines. The audience cannot but be captured by the wonderful colours contained in the seven glass and metal-made sheets hanging from the ceiling.

The panels hold soil samples from Milan collected by the Milano-Bicocca University. The soil was inoculated with different microorganisms such as soil bacteria and algae (Aspesi, Griccioli, Leuzzi 2022, 19), cellulose, and sulphuric acid (Yi 2022a). This constituted a Winogradsky culture that grew on-site and was then relocated in HangarBicocca, creating "a tableau of locally sourced soil" (Yi 2022a). The piece represents "the minute complexities of the local environment, its genetic, bacterial, and geological profile" (Aspesi, Griccioli, Leuzzi 2022, 19). The unique composition of the piece

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2 https://www.merriam-webster.com/dictionary/zoonosis.

Figure 3   Anicka Yi, *Biologizing the Machine (spillover zoonotica)*. 2022. Installation view, Pirelli HangarBicocca, Milan, 2022. Commissioned and produced by Pirelli HangarBicocca, Milan. Courtesy of the Artist and Pirelli HangarBicocca, Milan. Photo by Agostino Osio

continues evolving after its displacement. Even the culture's smallest reactions with air, light, and temperature cause changes in colours, textures, and patterns (19).

To monitor all the oscillations of the culture, a specific technological device was designed – the 'machine' from the title. On the top right corner of each panel is an electronic board that monitors the variations. When microorganisms grow, stay still, or decay, they produce different quantities of hydrogen sulfide. The device monitors these changes over a period ranging from one hour to one week, essentially acting as a microbial life heartbeat detector (Yi 2022a).

> The microbial species live in fragile and agitated symbiosis with each other, all the while being perceived by the electronic system. These panels gesture towards a future of more complex [...] multi-organism and machine hybrids. (Aspesi, Griccioli, Leuzzi 2022, 19)

5   Conclusion

Anicka Yi's *Metaspore* offered a powerful example of how art can contribute to the urgent task of reimagining our relationship with the planet and its inhabitants. Through a cosmopolitical approach and a "decentralized gaze" (Di Rosa 2022, 105) that emphasise the interconnectedness of all beings and

objects, Yi's work challenges us to think beyond the narrow confines of traditional human-centred perspectives.

Metaspore was an ecoart exhibition that enticed an ecologic perspective able to cultivate "the connections destroyed or marginalized by a linear logic, control, and conscious intentionality" (Bateson quoted in Formenti, Luraschi, Cuppari 2022, 357). In fact, Yi argues that unexplored realms of elements that would chemically not bond nor mingle can be explored when the explorer is free "from utility and function" (Yi 2022a). In this regard, the 'cultural fermentation' I attribute to Yi's practice resonates with the rhizomatic model articulated by philosophers Deleuze and Guattari. Analogous to mycelium, the rhizome possesses the capacity to traverse established boundaries, spreading through unconventional extensions and links that are initially underground, rationally unpredictable, and unjustifiable (Deleuze, Guattari 1987, 6-9). As we have seen in Yi, the rhizome is inherently cosmopolitical for its diverse, inclusive, and anti-hierarchical approach which challenges cultural codes and is based on ethics of care and interaction. It aims to go beyond anthropocentric perspectives and recognise how relevant is the agency of more-than-human entities in shaping the world. This approach is exactly what defines ecology in a cosmopolitical sense (Stengers quoted in Robbert, Mickey 2013, 1).

In Western contexts, there tends to be a sensory hierarchy that privileges vision and hearing. Yi refers to this as the "biopolitics of the senses", a framework that contributes to human desensitisation and a distancing from tactile and olfactory engagement. To counter this, Yi foregrounds olfaction, and more broadly the entire sensorium, in an effort to challenge sensory hierarchies and facilitate closer interspecies connections. Similarly, a scientific approach inspired by 'cultural fermentation' can engender rhizomatic relationships that invite us to re-engage with biology and the broader scientific realm, thus disrupting its traditional biopolitical function as a tool of control.

In a world where science is attributed legitimacy with blind faith, what needs to be recovered is a reconnection to it – "to re-interpret it as close, as it surrounds and affects everyone: to question, to mature, to pay attention to it" (Vich-Álvares 2022, 44). Because art is participatory in nature, it can be the connective tissue between top-down and bottom-up approaches, uniting science and politics, going beyond the ideological divisions of the Anthropocene (36-8). Being the result of both scientific research and intuitive artistic creation, Yi's pieces are able to transport the body of the audience to an impactful pluriverse of senses.

Yi's portrayal of life as unity recalls the theory of the holobiont mentioned by Haraway (2016, 60), where the host organism and its microorganisms form one body, questioning the concept of a separate individual. In the essay, I emphasised how Yi's art achieves this sense of interconnectedness through rhetorical figures. This interconnectedness transcends the traditional divide between human and non-human entities, highlighting the complex relationships that define our existence. However, while my analysis acknowledges this interconnectedness, it also recognises the cultural and societal frameworks that have historically separated humans from non-human entities.

The seeming 'polarisation' between human and non-human aspects is not intended to reinforce divisions, but rather to engage with the existing cultural context. By acknowledging these distinctions, we can better understand how Yi's art challenges and reconfigures these divisions, ultimately showcasing how interconnectedness allows us to attribute sociopolitical

significance to seemingly disparate elements such as smells, machines, and bacteria. In this sense, the exploration of distinctions serves to underline the transformative power of Yi's art in bridging these gaps and transcending conventional boundaries.

Therefore, the intent is not to perpetuate separation but to explore how art can navigate within the existing societal constructs while also questioning and reshaping them. The goal is to emphasise that, despite these distinctions, the essence of Yi's work lies in revealing the underlying unity and symbiotic relationships that define life as a holobiont. This recognition of interdependence allows us to view the seemingly isolated components as interconnected parts of a larger whole, fostering a cosmopolitical perspective that promotes inclusivity and care for all beings and objects.

Metaspore portrayed the importance of nurturing and sustaining unity with an approach rooted in care, where thinking with care means to "question unilateral and exclusionary bifurcations of living, doings, and agencies" (Puig De La Bellacasa 2017, 188). Art does it by definition, and ecoart takes this idea to another level with its cosmopolitical approach. Through its speculative and pluriversal perspectives, *Metaspore* inspired us to imagine alternative futures and world-making practices that challenge dominant narratives, offering a more hopeful vision for the future: a future where we get rid of our obsession with boundaries and confinements, which is nothing but a "hangover from modernism" (Yi 2022b).

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Section 4
Racial Ecologies and Extractive Violence

Exploring the Plantationocene Through Works by Otobong Nkanga

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Abstract   This paper engages Otobong Nkanga's work *In Pursuit of Bling*, *The Weight of Scars*, as well as *Anamnesis through the Lens of the Plantationocene*. Coined by cultural theorist Donna Haraway and anthropologist Anna Tsing, the theory of the Plantationocene positions the emergence of extractive agricultural and natural resource withdrawal systems that are dependent on precarious racialised labour developed during the colonisation of the new world, as a defining point in our relationship with land and landscape. Nkanga's work examines the relationship between land, body, and labour through the colonial history of mineral mining in Namibia and Nigeria, the displacement and transportation of plants and people as commodities in racial capitalism, and the act of reconstructing a fractured landscape. Through the use of haptic means, such as bringing material from the landscape into the gallery, Nkanga explores alternative ways of knowing and thinking about ecological and colonial histories but also how ideas of blackness emerged intertwined with the materials of the plantation through forced racialised labour. Drawing on Katherine McKittrick's exploration of *Plantation Futures*, Krista Thompson's analysis of the 'politics of Bling', and Kathryn Yusoff's scholarship on the colonial history of geology, I consider how Nkanga's work disrupts the traditional narrative around the Anthropocene to show historical environmental inequalities and the scars of colonialism in the present-day landscape.

Keywords   Plantationocene. Materiality. Anthropocene. Environment. Extraction. Racialised labour.

Summary   1 Introduction. – 2 The Anthropocene and Other Conceptualisations. – 3 Classification and the Extraction of Racialised Labour. – 4 Memory and Matter. – 5 Labour and Land. – 6 Conclusion.

1   Introduction

In an interview with the Tate Museum, Otobong Nkanga (2019) describes her experience visiting the Tsumeb mines in Namibia. Deeply impacted by this event she recalls,

> When I visited Tsumeb, you realize that it's a space that's been blown up with dynamite [and] I understood the difference between how technology

changes the way we extract [...] how we've accelerated that process of destruction, scarification, and wounding. People coming into a place and changing completely that structure of things, and that repercussion [of these events are] still happening today. (Nkanga 2019)

Nkanga's recollections evoke the forces that drive her work: colonialism, racialised labour, and the ecological destructiveness of extractive industries. Through the lens of the Plantationocene, this paper aims to explore Otobong Nkanga's work, considering the intersection between these forces and how the artist seeks to address the unprecedented impact that humans are having on the planet. As a theory, the Plantationocene positions the emergence of extraction systems dependent on precarious racialised labour and ecological violence (Haraway, Tsing 2019). It also considers environmental injustice and how communities of colour experience inequitable amounts of exposure to pollution and human-caused toxicity. By situating Nkanga's practice in the Plantationocene, I aim to examine how her work explores the relationship between land, body, and labour through the colonial history of mineral mining in Namibia and Nigeria, the displacement and transportation of plants and people as commodities in racial capitalism, and the act of reconstructing a fractured landscape.

2 The Anthropocene and Other Conceptualisations

Climate change is often spoken of as a species act; the idea that *all* humanity is to blame for our raging wildfires, rising sea levels, and species extinction, and other ecological disasters that seem to happen on an increasingly common basis. Much of the critique against the notion of the Anthropocene is founded on its inability to address these inequalities in the creation and burden of ecological destruction. As anthropologist Anna Tsing says: "the term appeals to a false universal of homogenous 'Man', which was created with a white, Christian, heterosexual male person as the basis for the universal", indicating that humanity as a whole is responsible for climate change, rather than the ideology and power of Western capitalism (Haraway, Tsing 2019). Françoise Vergès (2017, 84) in her seminal essay *Racial Capitalocene* similarly proposes an understanding of climate change that considers the historic intersection of colonial and ecological violence by capitalist systems of extraction. In 2015, cultural theorist Donna Haraway coined the term 'Plantationocene' to

> make visible power relations and economic, environmental, and social inequalities that have made ways of being in a world undergoing rapid climate change, accelerated species extinction, and growing wealth disparity more precarious for some human and nonhuman beings than others. (Haraway et al. 2015, 557; Moore et al. 2021)

Like many other terms such as the 'Capitalocene' (Moore 2016, 5) and the 'Chthulucene' (Haraway 2016, 2), the Plantationocene emerged as a means to explore the intersectional perspectives of environmental collapse that often is obscured in the universalist language of the Anthropocene's *anthropos*. Specifically, the theory positions the emergence of colonial extractive resource systems – dependent on precarious racialised labour – as a defining

point in the change of our past and present relationship with land and landscape. To quote environmental scholar Katherine McKittrick (2013, 2), "the legacy of slavery and the labor of the unfree both shape and are part of the environment we presently inhabit" and continue to shape our ecological, political, and socio-cultural presents and futures. Nkanga's work examines this relationship between the body and landscape, the material memory of colonialism, and how colonial extractive industries have left, and continue producing 'scars' in communities and bodies, both human and non-human (2).

3 Classification and the Extraction of Racialised Labour

Nkanga's work *In Pursuit of Bling* (2014) investigates the colonial practice of categorising land and labour for mineral extraction in Namibia and Nigeria. The installation comprises two tapestries, *The Discovery* and *The Transformation*, hung back-to-back, along with several pedestals displaying minerals and photographs. It is a strategic arrangement that forces the viewers to encircle the work to fully experience it and absorb the many objects on display. Utilising woven textile, photographic images, video, and raw materials such as mica and copper, Nkanga prompts viewers to look closely and spend time with the objects on exhibit, absorbing their interconnected histories. At the centre hangs the tapestry *The Discovery*, depicting a large stone on a map divided into sections based on chemical elements. The composition references the use of cartography as an imperial practice to section up landscapes based upon valuable resources, disregarding the lives of the human and non-human residents. In her book *A Billion Black Anthropocenes or None*, geographer Kathryn Yusoff takes a transdisciplinary approach in examining how the academic language of geology and mapping shaped Black subjectivity in conjunction with resource extraction. She observes that the

> geologic classification enabled the transformation of territory into a readable map of resources and organized the apprehension of extraction and the designation of extractable territories. (Yusoff 2019, 89)

This classification of land for mineral extraction is further emphasised by the work's title, which recalls the colonial 'discovery' of the New World and its pursuit of valuable resources such as the gemstone in the centre of the composition. Nkanga's tapestry shows how geology as a domain, fueled by colonial greed, became the means to see the environment and its inhabitants as exploitable resources for the uprooting of material and extraction of labour. Further, Yusoff (89) notes that "organization and categorization of matter enact racialization" as "bodies become gold, emptied of the sign of the human, reinvested with the signification of units of energy and properties of extraction. Black is made as will-less matter, a commodity object of labor". As Yusoff reveals, Blackness was created as a social construct in opposition to Whiteness to justify the dehumanising treatment of some humans as forced labour and the exclusion of others. In Nkanga's tapestry *The Transformation*, the upper body of the figures have been replaced by platforms mimicking the configuration of earth-like soil strata where materials like diamonds and other precious stones are found. The composition resonates with Yusoff's claim that just as labour and violence become embodied

in the glimmer pulled from the earth, the bodies of extraction absorb the very glitter they remove. Moreover, Yusoff writes:

> Blackness is understood as a state of relation (in Glissant's sense of the word) that is assigned to difference through a material colonial inscription, which simultaneously enacted the cutting of geographical ties to land and attachments to ecologies. Yusoff (2019, 10-11)

Blackness emerges through the violent assignation of bodies with commodity and material but also becomes reinforced through the intimacies between materials and bodies in the landscape. By placing the tapestries back-to-back, Nkanga ties the violent division of the earth for extraction ambitions with the violence done to the bodies living in the landscape who – through the colonial domain of geology – also become a resource of extraction.

The physical arrangement of Nkanga's installation *In Pursuit of Bling* invites a multifaceted interaction with the material histories on display. Rather than just passive observation, the work also functions as an alternative site of knowledge to be transferred and absorbed by the visitors in the museum; it is not only materials that circulate here but knowledge is also formed, uncovered, evoked, or repressed. Simultaneously, the pedestals and the light illuminating objects from above have other connotations too, evoking the structures of natural history institutions and their controversial practice of classifying, categorising, and displaying matter and beings, both dead and alive. Yusoff writes that

> in the categorization of matter as property and properties, both spatial dispossession of land (for extraction) and dispossessions of persons in chattel slavery (as another form of spatial extraction) are enacted. (16-17)

Just as matter becomes categorised by academic institutions, as visualised by Nkanga's tapestry *The Discovery*, those same institutions were responsible for the categorisation of humans through

> the division of matter into nonlife and life [that] pertains not only to matter but to the racial organization of life as foundational to New World geographies. (16)

Through evoking the hidden perspectives of land, matter, institution, and labour, Nkanga's installation explores how classification was used to justify slavery on the plantation and its many extractive equivalences.

4 Memory and Matter

By bringing material from the landscape into the gallery, Nkanga explores alternative ways of interacting with ecological and colonial histories. As art critic Lori Waxman (2018) observes in a review of Nkanga's 2016 exhibition *To Dig a Hole that Collapses Again* for the *Chicago Tribune*: "[a] part of Nkanga's strategy is this initial sensory attraction", the haptic communication of knowledge that goes beyond simply the visual. She not only depicts the materials, but she also brings them into the institution, making their reality immediate through their physical presence. In her work *Anamnesis*

(2016 and ongoing), Nkanga uses the fragrance of materials to evoke memories of colonial trade. The piece appears as a crack in the wall, filled with tobacco, ground coffee, and spices, the smell of the materials permeating the air of the exhibition space. Many of these fragrant objects were plants taken and transported into colonised areas so they could be grown for profit, often through slave labour. Haraway cites "the transportation of breeding plants and animals, including people" as crucial factors in creating a racist capitalist system of extraction involving simplified landscapes where one singular type of plant is bred in a controlled system of production (Haraway et al. 2015, 6). Through "the discipline of plants [...] and humans" (6), human and non-human beings were forcibly relocated across the sea to and from areas occupied by Europeans where plantations emerged. Like Haraway and Tsing describe, colonisation plays a critical role in the globalisation of goods for the products many of us consume daily. Describing Nkanga's installation, Gabrielle Welsh writes how

> The wall has literally ruptured in order to bring us (the viewers, the humans, the colonisers, etc.) the sweet pleasure of various products commonly brought to the Chicago-area. (Welsh 2018)

Rather than just evoking the landscape visually Nkanga asks us to feel its presence in the room, as an entity with its own agency and specific history. The crack which seems to take the shape of the Chicago River brings to mind the displacement of Native American tribes on Illinois land by settler colonialism as a necessary part of the plantation system and also illustrates Nkanga's desire to connect local and global ecological histories (Kenjockety 2019). Tsing notes that "plantations dispossess both Indigenous people and indigenous ecologies and bring in not only exotic plants but people from other places" (Haraway et al. 2015, 8). Through relying on highly alienated and disciplined labour and land, the plantation created a system of agriculture that maximises profit at the expense of the wellbeing and life of its workers and the landscape. Like Nkanga shows, the labour driving these systems becomes intimately associated with the materials of extraction, both through the assignation of the body of the other as racial labour in capitalist systems, and the physical connection between racialised bodies and the materials they extract.

Through centring on extracted minerals like copper and mica, Nkanga makes material a key actor in her work, considering different voices within the landscape beyond man and their interconnectedness with human colonial histories. The consideration of knowledge and memory becomes a key focus in excavating the complex relationship between body, land, and labour formed through the plantation (and its many extractive equivalences). In the video *Reflections of the Raw Green Crown* (2015) (also included in *In Pursuit of Bling*), Nkanga performs in front of several copper-roofed churches in Berlin. Wearing a crown of green malachite, a mineral extracted in Tsumeb, Namibia, which can be processed into copper, Nkanga delivers a monologue impersonating the mineral from a contemporary perspective, reflecting on its historic displacement and transformation from the Green Hill mine in Tsumeb to the Berlin cityscape. Looking at the smooth green roofs, the malachite says, "who would have guessed the process you've been through, uprooted, melted, polished, reshaped and integrated into crowns, the finest in town" (Nkanga 2015) contemplating the journey of its "distant cousin" in

the colonial extraction of labour and minerals. The performance considers how this material has been uprooted from the landscape and transformed through technological modification, into an almost unrecognizable product for consumption – an architectural ornament. Yet extraction creates permanent traces in the land and becomes embodied in the material that remembers. Quoting the National Museum of African American History and Culture, Yusoff (2019, 24-5) writes that "the lives of the enslaved (and in turn also the human cost of the transatlantic slave trade) were embedded in every coin that changed hands, each spoonful of sugar stirred into a cup of tea, each puff of a pipe, and every bite of rice". Similarly, in the copper roofs of Berlin churches the colonial violence of extraction is recorded; or like the malachite that Nkanga embodies declares:

> You remain silent out of fear and do not want to be traced for the fear of the horror within […] the horror impregnated in […] I am raw. A simple raw pinnacle, visiting, passing through, looking like you, and guessing that we might be related. Guessing that you might remember Tsumeb. (Nkanga 2015)

The "intimacies of these material relations" (Yusoff 2019, 24) which Yusoff describes, have here become embedded into malleable metal, a material memory of its violent history of production.

In her book, *Black Bodies, White Gold*, scholar Anna Arabindan-Kesson maps how Blackness became a material of extraction, along with the resources that black slaves were forced to tend to. She observes that

> as commodity forms, cotton and Black bodies reflected each other: the value of Black labor was expressed through and on the material of cotton itself. (Kesson 2021, 22)

Arabindan-Kesson's analysis explores how contemporary artists like Yinka Shonibare and Hank Willis Thomas employ cotton to

> materialize different histories and therefore different futures, in which conceptions of value, and Blackness, can be imagined beyond the constraints of the market. (22)

Through using the materials of the plantation, the artists conjure an alternative history emerging "in the tension between what can be seen and what might be felt" (20). In similar means, Nkanga uses the smell of traded colonial goods to explore uncomfortable connections between these materials and the racialised labour used to excavate them. In *Anamnesis* the artist punctures the white institutional space through a dark crack of aromatic matter, or like Art Historian Debra Riley Parr puts it,

> [Nkanga] confronts the viewer with a physical, olfactory experience of fragrant materials that drove the colonial project and still continue in a global flow […] [Nkanga] leads the viewer through a history of origins, (re)claiming a fragrant assertion of Blackness. (Riley Parr 2021, 28)

The warmth of the spices, coffee, and other goods, invites one to come closer while encouraging other ways of knowledge than the optic, which has been

emphasised by Western society. Through the evocation of smell, the piece escapes the confines of the wall and follows us throughout the space. It becomes an interaction we are forced to meet and carry with us unless we leave the room, and even then, it can haunt our olfactory memory. Through pungent aroma, the material histories of the daily goods we consume are imposed on us by Nkanga, a reminder of the complicated past and present structures they occupy in our colonial histories and everyday life.

5 Labour and Land

In her text *The Sound of Light. Reflections on Art History in the Visual Culture of Hip-Hop*, art historian Krista Thompson describes how shine, and particularly the phenomenon of Bling, presents a means to critique consumerism at the expense of Black bodies. Thompson argues that Bling creates a state of hypervisibility by emitting a white light so bright that it exceeds the extent of our vision. This state of hypervisibility and invisibility mirrors how "the overdetermined surface of the black skin prevented many from seeing the subjectivity of persons of African descent" (Thompson 2014, 489). Critiquing the visible as a way of knowing, Thompson (489) further traces the historic "commodification of Blackness and the blindness to Black subjectivity". Colonial slave traders oiled the skin of their black slaves to hide scars and create the appearance of good health for markets in the objectification of the Black body. As Thompson observes, the "bodily shine helped to increase the lives worth" as the shine helped to produce Blackness as a commodity, "[blinding] buyers to the slave's humanity" and defined them "in crushing objecthood" (Thompson 2014, 489). In the video *In Pursuit of Bling* (2014), also a part of the larger installation by the same name, Nkanga is seen physically interacting with the various minerals present in the installation. She holds them in her hand, applies them to her skin, and places them in her mouth as if to consume them, enacting both the violence of extractive ecologies and the corporeal memory engendered in the encounter between matter and body. She evokes both the displacement of matter and Black subjectivity described by Thompson as the Bling becomes quite literally embodied into the artist's skin and body, yet also how these encounters in the landscape are erased, hidden behind the shine of the reflective materials. Nkanga's use of extracted minerals explores Thompson's phenomena of Bling and emphasises the colonial infatuation with shine and value at the expense of Black lives. Like Tsing describes, along with the materials they are forced to attend to, "the people, too, become alienated resources," (Haraway et al., 2015) as Black bodies and labour become objectified as extractable resources. Nkanga's installation invites us to haptically engage with our interconnected histories in the land as she evokes the corporeal memory of Black subjectivity intimately linked with a landscape shaped by the pursuit of extractions.

The landscape and the bodies of consumption and extraction form a complicated ecosystem that Nkanga attempts to make visible through the grid of her installation *In Pursuit of Bling*. The interconnected structure combines elements of raw material, product, extraction, and labour to excavate the multiple memories carried by matter, body, and earth. As Nkanga's video shows, in occupying the landscape the bodies have touched, absorbed, and permeated minerals into the pores of the skin, often through poor working conditions. We should also note that even those who do not work in the

mines are affected by their environments, as particles enter the air and are brought into the homes by workers in their families. While Black labour provided the energy for extractions, Yusoff writes that they were

> excluded from the wealth of its accumulation. Rather, Blackness must absorb the excess of that surplus as toxicity, pollution, and intensification of storms. (Yusoff 2019, 88)

In the tapestry *The Transformation*, two figures have their upper body missing, replaced by platforms carrying chemical compositions perhaps as a result of the material absorption described by Yusoff. They are standing on grey matter, supposedly mica, a form of glitter extracted through mining in countries like Madagascar, India, and Nkanga's home country Nigeria. Found in cosmetics, electrical equipment, and paint, this material is ubiquitous in our everyday lives. The fine degree to which mica is mined means that mineral particles often surface into the air of poorly ventilated mines and enter the workers' bodies through breathing. 'Mica-pneumoconiosis' is the clinical term for lung disease caused by inhaling mica dust which causes lung impairment and inflammation (Hulo et al. 2013, 1473). Pneumoconioses are occupational conditions developed from extended exposure to mineral dust, often within the workspace (1473; Derickson 1983). Triangular structures lining the background suggest particles of unearthed mica circling in the air and their simultaneous presence inside the bodies indicates how the body absorbs its environment in conjunction with material uprooting. Moreover, Nkanga utilises Afrofuturist imagery in her mechanical figures to critique the use of technology that aided extraction and made labour disposable by reducing the need to specialise workers. Transformed through extraction, standardisation allows for bodies to become replaceable and mechanised, like the figures in Nkanga's work who lack upper bodies and heads, signifiers of personhood, left with only arms and legs, the means of labour. In an interview with Tate, Nkanga observes that only if we understand

> how we've accelerated that process of destruction, scarification, of wounding [through technology], then we can imagine what has happened in places that have been colonized. (2019)

Her cyborg figures then exemplify the violence of plantation systems made possible by technological advancements, whose use of forced labour through corporeal and material extractions exhausts land and people.

By evoking the intertwined histories in bodies, material, and land, Nkanga's work serves as a means to reimagine the past and the present, thus allowing new histories and ways of knowing to emerge. In *The Weight of Scars* (2015), two figures stand in front of a blue background depicting a map. They possess only the lower half of their body, and while lacking a torso, the figures have several arms in different shades mimicking the colors found within the landscape behind them. The weight of their legs rests on each foot in a contrapposto stance and their bilaterally symmetrical composition gives a sense of classical balance and rendering of the body found in classical art. Yet this balance is broken; instead of a beautifully sculpted body in pristine health, we only have limbs and too many for a normal figure. Rupture of stability is also present in other parts of Nkanga's tapestry where greens and vibrant orange specks the calm blue background.

Moreover, the figures hold a rope connecting a network of nine circular black and white images portraying barren landscapes with cracks, holes, and artificial structures from the Tsumeb mines in Namibia. These literal scars of the environment serve as an index of the invisible legacies of colonialism in the present-day landscape. Nkanga observes that

> the landscape can give an impression of what it is not [...] If we look at spaces that have gone through wars, they are later rebuilt, traces erased. We might not see the full story at first glance. (Elderton 2014)

Yet Nkanga's figures stand pulling the fragmented earth together, a composition that maps out a complex link between ecological extraction, colonial violence and the bodies left to bear the burden.

Cracks, pits, and hollows, visible in the photographs embedded in the tapestry *The Weight of Scars*, evoke the scars and histories of German colonialism present in the Namibian landscape of the Tsumeb mine. To Nkanga, holes can serve as a type of negative monument, a remembrance of the transportation of material from one place, leaving a wound to erect a structure elsewhere. On this idea, she says:

> We commemorate people and events by erecting buildings, structures or sculptures. I want to delve further and ask, – could the place that is holed out actually be a place of remembrance, commemoration and warning? (Welford 2020, 4)

In light of this, the emptiness suggested by the holes in the images not only indicates how materials and people were taken and moved for extraction purposes; they can also be a means to reflect on a landscape violently molded by environmental colonialism. Present in these photographs of the landscapes are scars left by colonial histories that impress their ramifications in contemporary life. In the exhibition catalog for Nkanga's MCA exhibition, titled *To Dig a Hole That Collapses Again* (a translation of Tsumeb into English), Omar Kholeif (2004, 5) reflects on the town's name. He describes it as "a turn of phrase that suggests the continual eruption and corrosion of a landscape, or perhaps a body consistently attempting to reconstruct or protect a site of mystical beauty only for it to be destroyed", much like the precarious figures in Nkanga's tapestry who stand pulling together fragments of the Tsumeb mine, carrying the weight of a scarred landscape; a ruptured earth. The name also indicates how the mining of minerals from Tsumeb and other precious matter like diamonds from mines in Namibia, served to pay for the German colony, which allowed more settlers to move onto the land and displace the original inhabitants (Hearth 2021). We should also remember that "the systematic practice of relocation for extraction is necessary to the plantation system" (Haraway et al. 2015). While indigenous communities in Namibia had been extracting Tsumeb copper since at least the late seventeenth century, this level of extraction was far beyond that (Hearth 2021, 445). Geologist Selby Hearth observes that Adolf Lüderitz, often named the founder of the Namibian colony, once wrote:

> I should be pleased if it turned out that the entire soil [of South West Africa] is a colossal mineral deposit which, once it is mined, will leave the whole area one gaping hole. (Hearth 2021, 453)

Lüderitz's statement evokes one of Haraway's distinctions on the plantation's effect on the landscape, that one

> aspect of plantation transformations of place is not just unsustainability but out-and-out extremism [...] the degree to which plantations destroy their own base, exhaust soils, exhaust peoples, exhaust plants and animals. (Haraway et al. 2015, 10)

While the Tsumeb copper mine was not a plantation, Yusoff (2019, 52) notes that "slavery and industrialization were tied by the various afterlives of slavery in the form of indentured and carceral labour that continued to enrich new emergent industrial power", often extractive industries like mining. Here, labour is kept precarious and vulnerable through poor working conditions, low pay, and migrant work (either transnationally or locally, isolating the subjects and reducing work-life boundaries). Katherine McKittrick describes these places shaped by extraction of labour and resources as "inhuman geographies" and that:

> The historical constitution of the lands of no one can, at least in part, be linked to the present and normalized spaces of the racial other; with this the geographies of the racial other are emptied out of life precisely because the *historical* constitution of these geographies has cast them as the lands of no one. [...] life, then, is extracted from particular regions, transforming some places into inhuman rather than human geographies. (McKittrick 2013, 7)

Nkanga's tapestry shows how it is not only the inhabitants of the geographies described by McKittrick who are tied to these histories. Her observations also mirror the passive response from the West in the increasingly frequent natural disasters affecting the global South, who quite literally must bear the scars and consequences of the ecological violence exercised by the West, an argument also emphasised by the tapestry's title *The Weight of Scars*. Our society's reliance on the extraction of minerals has created relationships of trade and consumption of resources that bind our global world together into a myriad of networks, moving resources from the south to the north. Our smartphones, laptops, and make-up, among many other things that form our lifestyle, are available to us because of the historic relationships Nkanga makes visible in her work. Her examination of the Tsumeb mines reveals how the histories of racialised labour and ecological violence continue to exercise their powers in our present systems of being.

6   Conclusion

Through analysing Nkanga's work through the lens of the Plantationocene, the artist's concern for exploring interconnectivity in our histories and landscapes emerges. Nkanga disrupts the traditional narrative around the Anthropocene, showing historical environmental inequalities and the social and environmental scars left by colonial extractions. By exploring the materiality of exiled plants through scent, Nkanga evokes the colonial histories tied to the growing of cash crops on colonial plantations that form a large part of our contemporary consumption. She reveals the secluded histories

of these objects for us to be conscious of our relationships with different agents in the world and the interconnectivity of our histories. Yet Nkanga also reveals the separate burdens we have to bear because of these different chronicles of events within the landscape. Specifically, the effects on the body of the other, both in the categorisation of Black bodies as labour for colonial capitalist extractions and the slow violence on bodies and landscapes shaped by a long-term history of extraction and pollution. Through often haptic means, Nkanga asks us to consider our interconnected histories to recognise the West's extensive withdrawal of resources in the global south and what McKittrick (2013, 7) describes as "the geographies of the racial other". Like Vergès says

> global warming and its consequences for the peoples of the South […] must be understood outside of the limits of "climate change" and in the context of the inequalities produced by racial capital. (Vergès 2017, 82)

and only if we understand and address how colonial rationale through the plantation system has shaped our past and present landscapes and resource extractions can we imagine other ways of being.

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Wasting Trajectories and Generative Ecologies: Leone Contini's *Foreign Farmers*

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Abstract   In this essay, we analyse Leone Contini's work *Foreign Farmers* which was created for Manifesta 12 and installed in the Botanical Garden of Palermo, Italy. It consisted of a vegetable garden comprising different plant species not native to Italy, whose seeds were gifted to the artist by migrant gardeners based in different parts of Italy. Contini's work addresses the disconnection between human communities and the land as a result of displacement. In this text, we analyse Contini's piece through the lenses of decolonial ecology and the notion of Wasteocene. We consider this installation as a framework to propose a reflection on how unexpected generative ecologies sparked by adaptation are the result of migration in the midst of anthropogenic global warming. By subverting the extractive logic of colonialism, the work questions dominant narratives and power structures that shape society. Furthermore, by extending Sharpe's metaphor to contemporary migrations in the Mediterranean and the shipment of toxic waste in former colonies, we want to propose an observation of how migrants are subject to 'the wake' of colonial violence. The routes once travelled by colonial vessels directed towards the shores of Africa are now the itineraries of the 'barconi' floating adrift in the sea, trying to reach the coasts of Southern Europe.

Keywords   Contemporary art. Migration. Ecology. Colonialism. Mediterranean Sea.

Summary   1 The Garden at the Border. – 2 Botany, Displacement, and Colonialism. – 3 Cultivating Adaptation.

1 The Garden at the Border

Lampedusa is getting closer, they are now 800 meters from the coast. 800 meters from the small Isola dei Conigli, separated from Lampedusa by a short stretch of sea. A shiver runs through the entire fishing boat. Italy is there, Europe is there, within reach. They think they will soon be welcomed, and so they decide to change clothes. They put aside the rags they

have worn so far and dress well, with the best clothes they have careful-
ly kept during all the months of travel, to celebrate their arrival in Italy.
They throw their cell phones into the sea because the captain ordered them
to, and they proudly await their arrival in Europe. (Leogrande 2015, 44)

With these words, Alessandro Leogrande[1] describes the moments preced-
ing the shipwreck of 3 October 2013, in his book *La Frontiera* (*The Border*).
On this occasion, 368 migrants died attempting to reach Lampedusa, an is-
land located on the southern periphery of the European Union but lying on
the African Plate, off the coast of Sicily, Italy. As highlighted by Leogrande,
this event not only represents one of the largest disasters ever occurred
in the Mediterranean Sea in the history of modern migrations, but it is al-
so closely linked to Italy's colonial past, as the majority of the victims, 360
individuals, fled from Eritrea, a former Italian colony, while the remaining
eight were Ethiopian.

For years, migration from the Horn of Africa has been the result of the
geopolitical instability of the region. This phenomenon involved all the for-
mer Italian colonies and may be partially explained as a consequence of
the legacy of European and Italian colonial violence. As pointed out by Le-
ogrande (2015), while such violence still reverberates in parts of Africa, the
histories of Italian colonialism are often overlooked or deliberately ignored
in mainstream cultural and political narratives. Over the last decades, the
political discourse has encouraged the racial and exclusionary narratives
of "invasion" (Castelli Gattinara 2017) and "ethnic replacement",[2] polaris-
ing the debate on movement through borders and nations.

In 2018, five years after the Lampedusa shipwreck, on a hot Sicilian sum-
mer day, the wind blows through the leaves of a shady tunnel of pumpkins
and squashes. A lush and abundant garden in a land of migration where
multiple peoples have established themselves throughout the centuries, and
where diverse cultures have found fertile ground to settle. Those gourds,
hanging from a bower, are the products of a displaced garden that bears
witness to long journeys. That ensemble of non-human entities was *Foreign
Farmers*, the installation by Italian artist Leone Contini that was displayed
in a corner of the Botanical Garden in the city of Palermo, Italy, as part of
the European Nomadic Biennial Manifesta 12 **[fig. 1]**.

Manifesta is a nomadic platform founded in the 1990s in response to ge-
opolitical changes in Europe, traveling to different European cities for each

1   Alessandro Leogrande (1977-2017) was an Italian writer and journalist. His books and re-
portages told histories of migrations, environmental and labour struggles, and authoritarian
regimes. In *La Frontiera*, he provided a glimpse of the migratory flows to Italy over the 2013-15
period through a compelling non-fiction literary reportage. By doing so, he examines encoun-
ters along present-day migration routes and combines personal reflections with historical and
social depictions of contemporary European immigration and Italy's colonial history. The nar-
rative centres around the island of Lampedusa as a crucial location for examining the Eritrean
diaspora and investigating the porosity of borders.

2   At the time of writing, April 2023, it is worth mentioning that Francesco Lollobrigida, the
Italian Minister of Agriculture and member of the far-right political party Fratelli D'Italia, made
significant use of the expression "ethnic replacement" (Kaval 2023). This particular phrase is
a widely recognised conspiracy theory that is often employed by extremist groups on the far-
right and is associated with racist ideologies.

Figure 1   Leone Contini, *Foreign Farmers*. 2018. Manifesta 12, Palermo. Photograph by Can Aksan. © Leone Contini

edition. Its goal is to foster connections between different cultural and artistic environments, contemporary art, theory, and politics in the context of a changing European society. Its curatorial practices, education, and mediation are characterised by an experimental and provocative tendency to create a dialogue between society and art.[3] The 2018 edition of the biennial, curated by Ippolito Pestellini Laparelli, Mirjam Varadinis, Andrés Jaque, and Bregtje van der Haak, was titled *The Planetary Garden. Cultivating Coexistence*. The exhibition's title was inspired by French botanist Gilles Clément, who described the world as a 'planetary garden' with humans as its gardeners; the curatorial concept of the exhibition proposed gardens as places where "diverse forms of life mix and adapt to co-exist" (Haak et al. 2018, 16), reconfiguring gardens as cross-pollination sites and as experiments in cohabitation. The selection of the works in the biennial stressed particularly the fact that managing a globalised world regulated by complex dynamics requires the recognition of the co-dependency of the species and a shared responsibility towards social and environmental factors. The venue in which *Foreign Farmers* was installed, the Botanical Garden of Palermo, has seen the importation of diverse species of plants from many different parts of the world during colonial ventures (Mazza 2018). The 'Orto Botanico' displayed works by six artists; some of the pieces were installed in the greenhouses and others were blended in the foliage and the plant specimens.

The garden created by Contini consisted of a combination of 50 different plant species not native to Sicily or Italy. Most of them had been initially cultivated by migrants who settled in various parts of the Italian peninsula and gifted their seeds to Contini for his research. The background and creative process of this work is exquisitely collaborative: from Chinese farmers in Tuscany to a Senegalese garden near Venice, the artist visited various 'displaced gardeners' who are cultivating these foreign varieties of vegetables for their own consumption (Mazza 2018). Furthermore, Contini counted on the help of artists-gardeners for the realisation of his work,

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3   See https://manifesta.org/biennials/about-the-biennial/.

namely Ibra Niang, Fratelli Biondi, Nazrul Islam, Mr. Hu, Juan (boy) Rumbaoa, Chhote Sher Shah, and J. Lin (Mazza 2018) **[fig. 2]**.

Thanks to artist residencies and fieldwork, Contini situates his practice and research within a specific social context (Marano 2017). His collective and community-based practice takes the form of cultural activism by studying intercultural conflict, migration, diaspora, power dynamics, and the ways in which these influence the botanical landscape, through lectures-performances, community events, videos, and drawings (Contini, Federici 2021). Throughout his practice, and thanks to his background in philosophy and cultural anthropology, Contini has investigated the subject of contemporary migration to Italy, tracing its roots back to Italian colonialism and imperialism. During the course of his anthropological studies and his research on postcolonial themes, he learned from his grandmother about his family's involvement in the colonial history of Libya through the experiences of his great-grandmother, grandmother, and mother. He sought to gain insight into how his family positioned themselves within the context of the Italian occupation of Libya, learning that his very existence was linked to this dark period in history (Contini, Federici 2021). The artist's interest in Italian colonial history led him to the creation of a workshop titled *Ghost Museum*, held at Nuova Accademia di Belle Arti in Milan in 2021. The workshop explored the dismembered collection of the former Museo Coloniale, a fascist institution that was closed in 1971, and its collection was scattered in various museums and institutions in Rome. With this project, he aimed to question the meanings, implications, and violence of ethnographic collections and the 'collective amnesia' of Italian colonialism and held a collaborative class on the topic (Contini, Federici 2021).

Through fieldwork and deep engagement with the territory, he aims at building long-lasting fruitful connections (Contini, Federici 2021), like in the case of his garden for Manifesta in Sicily, an island he has a family tie with, as his grandmother was from Agrigento (Contini 2017). Contini's installation perfectly embodies the syncretic paradigm that characterises the city of Palermo and this edge of the European continent. Due to its location in the Mediterranean Sea, Sicily has been and continues to be a centre of migratory flows and a cultural melting pot. Over the centuries, it has been occupied by various European civilisations, including the Ancient Greeks, Arabs, and Normans, and maintained long-standing connections with Northern Africa and the Eastern Mediterranean for over 2,000 years (Orlando 2018). These connections persist to this day, as evidenced by recent migrations from Africa and Asia that have been driven by numerous conflicts, such as the Arab Spring, as well as the worsening effects of anthropogenic global warming.

Our research methodology for the following essay considers *Foreign Farmers* as fertile ground to explore ideas around its topics which travel beyond the borders of Contini's garden, navigating onto critical theory, ecology, decolonial thought and environmental justice. We do not intend to outline here a comprehensive critique or review of *Foreign Farmers* or Contini's practice; nevertheless, we are interested in cherishing and pursuing its inspiring potential. Through the lenses of decolonial ecology (Ferdinand 2022) and the notion of Wasteocene (Armiero 2021), we consider Contini's installation as a framework to propose a reflection on how unexpected generative ecologies sparked by adaptation are the result of migration in the midst of anthropogenic global warming. Within the current geopolitical,

Figure 2   Leone Contini, *Germinability*. 2018. Manifesta 12, Palermo. © Leone Contini

historical, and socio-ecological turmoil, we agree that "[t]his is not simply about acknowledging the 'others', their histories and cultures; it is rather to register the limits of our own apparatuses of knowledge" (Chambers, Cariello 2020, 143). Thus, in this text, we respond to Chambers and Cariello's call to reorient the discussion on the Mediterranean by exploring different approaches beyond the established framework of academic critique.

Both Sicily and the wider Mediterranean region are anticipated to be greatly impacted by human-driven climate change. In this geographical context, it is estimated that up to 40% of winter precipitation has the potential to be lost (Tuel, Eltahir 2020), while the average regional land temperature is projected to increase 20% more than the global mean temperature (Cramer et al. 2020). In such a context characterised by rapid environmental transformations, due to the presence of a diverse range of species and a high concentration of human populations, the Mediterranean region offers a distinctive prospect to explore the mechanisms of adaptation (Aurelle et al. 2022). By bringing together migrants and seeds from different parts of the world, *Foreign Farmers* bears witness to the enduring legacy of the many cultural and ecological influences on the region and present to the migrations accelerated by anthropogenic climate disruption.

By hosting part of the European continental border in which necropolitical violence has become the norm (Mbembe 2003), Sicily represents a vantage point to reflect and challenge the euro-centred narrative of the Mediterranean. As suggested by Chambers and Cariello (2020), reopening the 'Mediterranean archive', intended as the ensemble of multiple stories and characters, translates into registering "the limits of our own apparatuses of knowledge" (143) that are not only defined by the political European discourse but are also restricted by academic and disciplinary boundaries. Addressing such a perspectival shift implies questioning and looking for new languages to interact with the complex Mediterranean framework.

In this essay, we explore and challenge human-centred ontologies, following Anna Lowenhaupt Tsing's (2015) lesson to engage in imaginative thinking, a holistic approach that considers multispecies assemblages[4] in exposing capitalist-driven destruction, alongside Chambers and Cariello's invitation to value interdisciplinarity, applying it to the Mediterranean question. We intend to do so by highlighting the inception of new, unexpected ecologies that are also driven by the current social and environmental crisis, while recognising art as a tool to problematise the Mediterranean space to foster new interpretations and narrative trajectories (Chambers, Cariello 2020). We propose considering migrant's adaptation practices as a source of inspiration to think and develop new forms of ecological reparation. When arriving in a new land, migrants are forced to embrace passivity in the face of the sovereignty of the border, and in the eyes of European and Western society become a "wasted human", relegated to the most neglected corners of society (Armiero 2021). Thus, it is worth noticing that Contini is aware of the fact that people who migrate are often stripped of any form of agency (Contini 2016). The migrant as a wasted entity follows the theoretical framework outlined by Marco Armiero, who aptly describes the contemporary epoch as the age of waste, namely the "Wasteocene" (2021). In this essay, we propose that Contini's garden acts as a catalyst for the migrants' agency, in which every gardener-migrant "returns to being a self-determining subject" (Contini 2016, 222). Considering migrants' bodies as "wasted bodies" serves as an initial step to bring them back from the dehumanising dimension and acknowledge the vitality and agency they are deprived of. It is also valuable in highlighting the context of necroviolence in which people who migrate are trapped, not only in proximity to the border but also once this boundary has been crossed. Indeed, to use the words of Lowenhaupt Tsing:

> [e]veryone carries a history of contamination; purity is not an option. One value of keeping precarity in mind is that it makes us remember that changing with circumstances is the stuff of survival. (Lowenhaupt Tsing 2015, 27)

2 Botany, Displacement, and Colonialism

As mentioned earlier, the Botanical Garden of Palermo was originally conceived as a testing environment to acclimate plants imported from every corner of the planet (Mazza 2018). Gray and Sheikh (2021) note that botanical gardens represented a key instrument for colonial enterprises and served various empires as a laboratory to test plants and select which ones had the desired qualities, such as being high-yield or resistant to diseases, and had characteristics that were suitable for being commercialised. Botanists like William Jackson Hooker, the director of Kew Gardens in England between 1841 and 1865, would organise expeditions across the globe to collect plant specimens, which would then be studied by botanists in England (Gray, Sheikh 2021). The movement and transfer of plants happened

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[4] As suggested by Lowenhaupt Tsing (2015), the notion of 'assemblage' emphasises the interconnection of political, economic, and socio-ecological forces converging to influence various life forms.

alongside the transportation of people. The newly created hybrids were then shipped to the colonies where they were destined to be employed in monoculture plantations, exploiting local people as a workforce or importing enslaved people from Africa (Gray, Sheikh 2021). Moreover, the study of the specimens involved their extraction and appropriation. This was achieved through the replacement of the specimens' names with a Classical Latin name, thereby suppressing the indigenous term used to designate a particular species. Consequently, the species' significance within the cosmologies and ecologies was lost (Gray, Sheikh 2021).

On the occasion of Manifesta 12, Contini transformed the colonial section of the Botanical Garden of Palermo, a space that once was a tenet of the exploitative colonial apparatus, into a space of hybridity by gathering and planting non-native plants from various countries, introduced to Italy by migrant communities. The squash *cucuzza*, the local name of the species *Lagenaria longissima* (Contini 2017), shared the space with Bengali, Sri Lankan, Philippine, Turkish, and Chinese gourds[5] (Haak et al. 2018). By mixing these different non-human entities together, the artist created a diverse multispecies garden that reflects the cultural exchange and blending that occurs between different human communities. Using the vernacular names[6] of the plants instead of the official Latin denomination, Contini refuses taxonomisation and appropriation, and with it, the history of classification that characterised the colonial apparatus of biology, in particular by botany.

In the context of migrations and displacement in the Mediterranean investigated by Contini's work, the forced relocation and removal of non-human entities constituted a fundamental component of Italian domination in North and East Africa and a prominent aspect of the colonial project. In particular, during the fascist period, the colonial venture sought to compel the acclimatisation of various species to the African environment. Horses, sheep, and cattle were transplanted into the Libyan landscape from Italy, while local insects, like flies and worms, and microorganisms, like parasites, impacted both the human and non-human populations (Armiero, Biasillo, Hardenberg 2022).

Following these trajectories, pitted against the direction of Contini's generative routes, the Italian criminal network, which across the 1980s and 1990s was labelled as *Navi dei veleni* ('Toxic Ships'), illegally transported toxic waste from Italy to Africa, Asia, and South and Central America (Braga 2018). The transportation and the discharge of large amounts of litter, containing harmful materials, is a common practice worldwide, demonstrating the tendency to establish regimes of violence and exploitation across and within the borders by neoliberal economies (Armiero 2021). Such criminal processes often rely on the same past colonial routes that have contributed to the ongoing geopolitical instability. In light of this continuum, Armiero's definition of "Wasteocene" highlights the presence of wasted human and non-human bodies marking the current epoch of social and ecological turmoil.

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[5]   To use Contini's words, "[e]ach plant embodied a different degree of adaptation to a new environment, which was meanwhile undergoing a process of mutation: some seeds that I planted in the botanic garden of Palermo had arrived in Tuscany in 2005 from the rural areas near Wenzhou; a Senegalese hibiscus had been growing near Venice for 5 years, while bottle gourds from Bangladesh had already made Sicily their home, interweaving their vines with the local cucuzza, landed from Africa a long time ago" (Regine, Contini 2020).

[6]   The vernacular names were reported in the captions of the installation in Manifesta.

By adding another interpretation to the critical debate regarding anthropogenic global warming, such a term aims to emphasise the social, ecological, and economic dynamics based on wasting relationships which produce "wasted human and non-human beings, then wasted places, and wasted stories" (Armiero 2021, 2). According to Armiero, fuelled by the global north's social and neoliberal economic model, waste has become a defining trait of our cultural and geological time and is intended as an "ontological quality and not the product of unjust socio-ecological relationships" (21). Such a paradigm is established through habitual practices that involve particular strategies such as the concealment and normalisation of unjust actions, as well as the dismissal of "any kind of knowledge and experience, which may prove that other points of view existed" (21). Thus, the colonial project is located in this complex terrain, at the core of any wasting relationship. On the dynamics that tie colonialism to waste and pollution, Max Liboiron (2021) also has pointed out that "pollution is not a manifestation or side effect of colonialism but is rather an enactment of ongoing colonial relations to Land" (6).

Thus, pollution is integral to the colonial process by shaping the landscape and altering ecologies. Indeed, the colonial apparatus relied on a logic of domination and control of the land, resulting in the violent extraction of natural resources and the imposition of Western scientific paradigms on Indigenous knowledge (Ferdinand 2022). On the effect on the landscape and ecologies and following the critical debate regarding the Anthropocene, Malcolm Ferdinand (2022) has studied these relations and coined the term 'Negrocene', emphasising the intersectionality between race and ecology, and the ways in which race has been used to justify and perpetuate environmental injustices. The term Anthropocene is deemed by Ferdinand to be inadequate as it overlooks the implication of colonial slavery, thus lacking a specificity that is essential to explain Earth's geological status in relation to humanity. For Ferdinand, the word 'Negro' designates

> those whose social survival is marked by an exclusion from the world and who are reduced to their 'value' as energy. The Negro is White, the Negro is Red, the Negro is Yellow, the Negro is Brown, the Negro is Black. The Negro is young, the Negro is old, the Negro is a woman, the Negro is a man. The Negro is poor, the Negro is a worker, the Negro is a prisoner. The Negro is brown-forest, the Negro is green- plant, the Negro is blue-ocean, the Negro is red-earth, the Negro is gray-whale, the Negro is black-fossil. (Ferdinand 2022, 60)

Such critical intervention in the field of postcolonial and environmental thought developed by Ferdinand challenges the dominant narrative of the Anthropocene in relation to colonialism's impact on Caribbean ecosystems and reveals the ways in which colonialism, slavery, and racism have shaped the current global social, political, ecological, and geological conditions. By bringing attention to the experiences and perspectives of Black and Indigenous peoples, the Negrocene seeks to decolonise the discourse on the Anthropocene, highlighting how the colonial project relied on a logic of domination and control of the land, resulting in the violent extraction of natural resources and the imposition of Western scientific paradigms on Indigenous knowledge (Ferdinand 2022).

By shining a light on the correlation of ecology, migration, and colonialism, Contini's project encourages us to reflect on how the present is shaped

by the past, his work shows how the agency of wasted entities appears intertwined in a transtemporal dimension. In this sense, Contini's work can be analysed through Christina Sharpe's powerful analogy, introduced in her book *In the Wake. On Blackness and Being*. Sharpe (2016) reflects on the Atlantic slave trade by comparing the wake of slave ships crossing oceans to the ongoing wake-legacy of violence and racism experienced by Black people. This wake, whose origin can be traced back to the violence of colonialism, represents a metaphor, as the lives of Black people are continually subjected to the reverberations of historical injustices and ongoing systemic oppression: "[T]o be in the wake is to occupy and to be occupied by the continuous and changing present of slavery's as yet unresolved unfolding" (Sharpe 2016, 13-14).

Sharpe's metaphor in this way challenges a linear conception of time, highlighting the persistence of trauma and its enduring impact on the present. The traumatic events of the past are thus not confined to a specific moment in time, but instead continue to reverberate in the present and future, causing a wake of suffering that affects generations. It is a reminder that the struggles for racial justice and equality are ongoing, emphasising the importance of acknowledging, confronting, and transforming this legacy. In the context of current migrations in the Mediterranean, the *barconi* (Italian term to describe the makeshift boats migrants cross the Mediterranean with) travel in the opposite direction of the ships that sailed to colonise the shores of Africa, remarking and retracing the 'wake' of colonial violence. Sharpe's analogy highlights the enduring impact of colonialism and slavery on the lives and experiences of Black people, which can be expanded to the context of the Mediterranean and the condition of migrants. By drawing attention to the cyclic nature of trauma, Sharpe's argument serves as a reminder of the ongoing impact of historical injustices and the urgent need for collective action toward justice and equality. It also underlines the importance of understanding the complex interplay between past and present, and the ways in which the legacies of colonialism continue to shape our world today.

Therefore, the migrant's garden created by Contini subverts the extractive logic of the colonial approach to land and questions the dominant narratives and power structures that shape our society imagining new ways of being and relating to each other and to the planet. This invitation is also a request to embrace the complexity of the anthropogenic climate crisis. Despite being spatially displaced, the migrants' heritages offer new paradigms of ecological and justice reparation. In Contini's work, seeds become evidence of the porosity of borders, which for Franco Mezzadra and Brett Neilson (2012) are critical components of cognitive processes:

> since they allow both the establishment of taxonomies and conceptual hierarchies that structure the movement of thought. In so far as it serves at once to make divisions and establish connections, the border is an epistemological device, which is at work whenever a distinction between subject and object is established. (65)

By penetrating porous borders, migrants bring part of their biocultural heritage to a new land. From Vulgar Latin *hortus gardinus*, traditionally gardens are enclosures and their very essence is in fact defined by their borders. Thus their existence is based on a logic of exclusion: what is within the

enclosure is the garden and what is outside is not. *Foreign Farmers* makes us reconsider the definition of a garden, promoting openness and porosity over closure. Contini's garden has opened its borders, creating a space of multispecies hospitality.

3   Cultivating Adaptation

As previously anticipated, in this essay we considered the 'Mediterranean archive' as a reference point to explore the colonial and multispecies trajectories that are investigated by Contini's work (Chambers, Cariello 2020). By adopting the biocultural heritage of migrants, the artist emphasises the Mediterranean Sea as an environment of convergence of a variety of interconnected challenges and as a point of reference for multiple naturecultures. Following this exegesis, *Foreign Farmers* represents a tribute to the enduring legacy of diverse cultural and ecological influences on the region, and to the continuing importance of cultural exchange and dialogue in the midst of anthropogenic global warming. In such uncertain scenery, Contini's work stretches new and different naturecultural paradigms. Within the dilemmas of our current times, Contini's work relies on multicultural adaptability to show its ensemble of hybrid histories in which new unexpected ecologies are the results of multiple human and non-human trajectories.

Furthermore, in his examination of the concept of ecumene, Ferdinand (2022) elucidates how colonialism is responsible for the disruption of the specific set of relations between human communities and the non-human world. The transatlantic slave trade caused an 'ecumenal rupture', the ecumene being the complex relation between land, humans and non-humans. Through the displacement of people, a geographical and ontological rupture of humanity's relationship with Earth took place, causing the disappearance of the sacralisation of the land, and the practice of seeing the land as sacred and imbued with spiritual significance (Ferdinand 2022). In other words, *Foreign Farmers* encapsulates Ferdinand's analysis of the concept of ecumene, as the vegetable garden represents a form of 'ecumenic reparation' by seeking to reconnect the people with the land, a new land they have been transplanted to. The renewed ecumene of the 'uprooted' garden offers the possibility of unexperienced cosmologies. Through the act of planting and cultivating a garden, individuals can reconnect with the Earth and experience a sense of belonging and interconnectedness with nature and finally begin to mend the 'ecumenal rupture'. The outcome of migrations is also present in the ecology of the territories involved in the displacement; while the climate is changing, the biosphere needs to adapt to it. Italy's biodiversity symbiotically evolves with the newly imported species, in an ecological wake that originated from the simultaneous mobility of humans and non-humans. According to Contini:

> To locally reproduce a vegetable which comes from another micro-clime implies its adaptation/transformation, therefore implies the "creation" of biodiversity. While the existing seed banks aim to protect the biodiversity created in the past, the Living Archive is mainly projected into the future. (Contini n.d.)

This project can be seen as an attempt to address the disconnection between the migrants and the land that has resulted from their displacement. In

addition, by collecting and re-evaluating the experiences and stories of migrants, the work redeems the figure of the migrant as a wasted entity, symbolically restoring their agency. By involving foreign settlers in the design and planting process, the artist acknowledges their contribution and expertise, creating an inclusive space. At the same time, by tracing the importation of seeds and the movements of people that transport them, the artwork reveals the complex histories and legacies of colonialism that continue to impact our world today. While investigating unforeseen farming practices, *Foreign Farmers* breaks the capitalistic "way of organizing nature" (Moore 2016, 6) that is embedded in Western social and economic colonial relations. It does so to offer new strategies and provide a multispecies space for both human and non-human participants. Instead of introducing new practices, Contini's installation illuminates an existing subterranean reality, unveiling it to a wider audience providing the exposure these multispecies assemblages deserve. In this sense, *Foreign Farmers* mirrors a current phenomenon concerning the potential and possibilities created by migrations that are hindered by necropolitical violence carried out by institutions and surveillance apparatuses, fuelled by racist and conservative inclinations, thus advocating for a discriminatory policy of exclusion. The experimental garden extends beyond its depiction of the contemporary collaboration of human and non-human in the current geopolitical landscape by propagating itself into the future, as the plants produce seeds which will give rise to new plants and hybrids, along with their human companions whose culture will adapt and hybridise accordingly. In other words, this garden establishes new non-human collective representations, and by transforming the necropolitical violence of the European borders, it foregrounds the practices of neglected communities to propose new thriving ecologies.

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Just Who I Am

Zoë Fitzpatrick Rogers
Artist

Abstract   This chapter researches New York City's water, made inaccessible through hostile architecture of the waterfront in Brooklyn. I cite my practice in relationship with this research, and reimagine possible outcomes of water accessibility through affordability, materiality, craft, and open-source research. In centring autonomous agency, this project creates multiple levels of intimacy with material, investigating toxicity and healing through environmental justice. My research is situated within significant environmental works such as Silvia Federici's *Caliban and the Witch*, and Kathryn Yusoff's *A Billion Black Anthropocenes or None*.

Keywords   Water. Ecology. Toxicity. Visual Art. Anthropocene.

Summary   1 Boundaries and My Inability to Set Them. – 2 Trash Goblin Mode.

1   Boundaries and My Inability to Set Them

1.   we are interconnected
2.   you are geology
3.   to what end?[1]

When I missed someone I loved, I would think the water connected us. Not in terms of the ocean, but in the movement of water in evaporation and rainfall, that one day I might drink the same water they drank or shower in the same water they showered in, and we were once again connected.[2]

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1   After a studio visit conversation with Hamza Walker, 2021.

2   This caused my friend who was reading an early draft to look up at me in horror. Water has history.

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Ca'Foscari

Living in New York City is living on a series of islands, an archipelago, surrounded by a common resource that residents need equitable access to – water (or fish) as a resource for sustenance. Here, the water is a medium holding the city's history, with multiple possibilities for its future becoming an autonomous common resource for care and recreation.

At the centre of this chapter is the city's water, made inaccessible through hostile architecture, a strategic approach in city planning that employs specific features of architectural and spatial design to intentionally influence or limit human behaviour and actions. This is especially evident in the design of the waterfront in Brooklyn. I reimagine possible outcomes of water accessibility through affordability, materiality, craft, and open-source research. In centring autonomous agency, this project creates multiple levels of intimacy with material, investigating toxicity and healing through environmental justice. My research positions itself within the context of seminal environmental works such as Silvia Federici's *Caliban and the Witch*,[3] and Kathryn Yusoff's *A Billion Black Anthropocenes or None*. I consider relations between the contemporary geology of New York City and economic systems, and how the interconnection of these issues impact residents in the city. In my visual art practice, I investigate the ecologies of pollution alongside public health policies within the urban landscape. Through methods such as collage, performance, and sculpture, I craft speculative ecologies that explore the intersections between ecology and capitalism.

The body of water between Red Hook and the Verrazzano Bridge, known as the Upper Bay, holds histories of violent intervention: from the poison inflicted on common resources through privatisation to borders placed on the waterfront to prevent access. Chemicals dumped directly into the water in Fresh Kills landfill, and raw sewage release points leach into the Upper Bay. They combine into the larger body of water, fish, and those who access the contaminated resources of the city.

Further north, in New Jersey, bad batches of Agent Orange used by the U.S. military reside in the sediment of Newark Bay. Public policy analyst Dave Pringle found that "one blue crab in Newark Bay has enough dioxin to give somebody cancer" (Flanagan 2017) while advocating for Clean Water Action, a Environmental Justice grassroots organisation. Twenty-five miles away, in Raritan Bay, the State of New Jersey officially advises that it is safe to eat one blue crab a month (State of New Jersey 2020). Once consumed, dioxins are "absorbed by fat tissue, where they are then stored in the body. Their half-life in the body is estimated to be 7 to 11 years" (World Health Organization 2016).

Steel and concrete infrastructure surrounding the Upper Bay intersect with the Brooklyn-Queens Expressway. Both of these isolate the waterfront from the neighbourhood through land privatisation. Infrastructure in the Upper Bay includes Home Depot, The Metropolitan Detention Center, Industry City, Sims Municipal Recycling – Sunset Park Material Recovery Plant – Owls Head Wastewater Treatment Plant, and Con Edison – Gowanus Substation. Lining this hostile architecture is the Brooklyn-Queens Expressway,

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3 I am thinking about Federici's writing as an environmental work in the context of primitive accumulation, land privatisation and removal of common resources as actions that have impacted the waterfront of NYC.

Figure 1   NBC, *Law & Order. Special Victims Unit*, "Strange Beauty". 2012, season 13, episode 22. NBC

Figure 2   RKO Radio Pictures, *Manhattan Waterfront*. 1937. Produced by the Van Beuren Corporation

Figure 3   *The Godfather*, directed by Francis Ford Coppola. 1972. Paramount Pictures

Figure 4   CBS. "Mayor Adams drinks water at Jacob Riis Houses to reassure residents". New York, 10 September 2022. CBS

Interstate 278, which runs from New Jersey to the Bronx. Built by Robert Moses (1888-1981), a controversial public official widely criticised for not consulting the public in realising his designs, Moses "cut a trench through the working-class neighbourhoods of what was then known as South Brooklyn, separating Red Hook from the rest of the borough" (Spellen 2016) in 1961 to build a road on top of existing public transport. This changed the area from being heavily used by commuting pedestrians to an area with no resources for the local community. There have been attempts to dismantle Moses' infrastructure, such as the 1998 sixteen million dollar feasibility study funded by the Federal Government (Stamler 1998), which was ultimately cancelled in 2011 by the Federal Highway Administration.[4] The city's hostile architecture and socio-economic borders, specifically in this neighbourhood, gatekeeps access to water for sustenance and pleasure as an autonomous and sustainable common resource. As my practice situates itself within this specific historical and ecological context, I engage with mainstream media portrayals to decode the narratives constructed around this architecture in dominant cultural discourse. I draw upon Jonathan Nichols-Pethick's 2012 book, *TV Cops. The Contemporary American Television Police Drama*, to understand how justice is depicted in U.S. media, where "culpability and guilt are often located at the level of the individual. Justice is fulfilled when the guilty or culpable individual is punished" (Nichols-Pethick 2012, 117).

Visual culture has reinforced this ideological system of the interconnected ecology of the city. *Law & Order* (1990-), is the U.S.' longest running

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4   See https://www.cnu.org/highways-boulevards/campaign-cities/nyc-BQE.

television franchise, and frequently scripts the waterfront as being a part of the city which accessing alone provides grounds for questioning **[fig. 1]**.

"Nobody fishes in the Gowanus Canal, it's so polluted."
Law & Order dun dun
"So you're telling us you found the leg when you were fishing?"
"See? See? This is why I don't trust the cops".**5**

Law & Order did not begin this constellation of representation. The 1937 documentary *Manhattan Waterfront* **[fig. 2]** describes waterfront dwellers as "unholy ghosts of men who have failed in every opportunity that life in the land of opportunity can afford".**6** Jonathan Nichols-Pethick refers to the "spectacle of decay" (Nichols-Pethick 2012, 54) within city portrayals in 1980s police dramas, a motif that persists in *Law & Order* where suspicion is cast upon individuals opting out of dominant capitalist structures and pursuing autonomous access to urban resources. This architecture of New York is designed for environmental injustice, and media depictions of the city serve to individualise the issue, obscuring its systemic dimensions **[figs 3-4]**.

Women under 50 and men under 15 are advised not to eat fish caught in the Upper Bay, but the water is an active fishing site. In *Caliban and the Witch*, Federici writes that "capitalism, as a social-economic system, is necessarily committed to racism and sexism" (Federici 2004, 17). The history of the removal of common resources in Medieval Europe consists of processes of witch hunts, colonisation, Christianisation, and primitive accumulation and is "still unfolding before our eyes, as it has for the last 500 years" (17). I believe that Federici's intuition is relevant in thinking about the history of the city's waterfront. The logic of primitive accumulation, first created in Medieval Europe, and its subsequent replication across different geographies, manifests in the urban fabric of New York City today. Ruth Wilson Gilmore positions that

it might be more powerful to analyse relationship dynamics that extend beyond obvious conceptual or spatial boundaries, and then decide what a particular form, old or new, is made of, by trying to make it into something else. (Wilson Gilmore 2022, 477)

My practice of researching geological structures of materials and their relation to the logic of late capitalism in terms of privatisation and individualisation informs my process of collaging, layering, and redacting speculative ecologies, transforming the logic of water in the city from a private, fixed entity to a public, collective, active body, and site of ongoing contention **[fig. 5]**.

Ecological practices are impacted by histories of blocked access to common resources. Thinking about my practice in relation to Federici, Yusoff, and Wilson Gilmore's writing helped me to inform my process of knowledge production around the city's water through craft. I began exploring environmental care and the possibility of learning skills from an outsider

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5 NBC, "Strange Beauty". *Law & Order. Special Victims Unit.* 2012, season 13, episode 22, 10′35″-12′02″.

6 RKO, *Manhattan Waterfront.* 1937, 5′25″-5′30″. `https://archive.org/details/ManhattanWat`.

Figure 5 Zoë Fitzpatrick Rogers, *VISION BOARD I*. 2023. Cadmium yellow, cadmium orange, crap green, ultramarine purple, salvaged glitter, graphite, iron oxide, copier ink, Hurricane Henri (2021), on salvaged cotton paper

standpoint; as an artist not having scientific qualifications, or experience in law or public policy. In attempting to learn these systems of knowledge through my experience, I engaged with the idea that everybody in the city should have access to clean public water, and that this should already be in place, but under the logic of capitalism this is a radical demand. Alongside my practice, I teach boatbuilding to public school students across Brooklyn. Students collaboratively build an Optimist Pram in each classroom over a school year, using only hand tools, with four sheets of plywood. The students then sail in the East River, directly opposite the skyscrapers of Wall Street. I teach at a school in East New York that does not have clean drinking

Figure 6   Nintendo, *Animal Crossing. New Horizons*. 2020. Nintendo of America Inc.

water accessible for students. The disparities of wealth in the city are directly linked to the architecture crafted by previous generations. I am not only teaching how to build an object. I am working with young people in the city on how to autonomously access resources in their community, working with them to build their emotional intelligence through talking about our feelings as an integral part of the educational structure, and how to reimagine place. Wilson Gilmore identifies Environmental Justice activists as "reconstructing place so that concepts of 'safety' and 'health' cannot be realised by razor-wire fences or magic-bullet cures" (Wilson Gilmore 2022, 133), and that "women take the lead in everyday struggles against toxicities" in the intersection of impact and community building.

Even in imaginary and virtual spaces, creating a world that primitive accumulation has not contaminated and dominated seems impossible for designers. *Animal Crossing*[7] is a game where a narrative in which common resources are commodified and exploited for individual capitalist gains **[fig. 6]**. Simulations of fishing and foraging in Nintendo's *Animal Crossing* live on land devoid of history. Federici, Wilson Gilmore, and Yusoff are muted by a simulated reality in which the present extraction of resources is the only way to succeed and ever replenish. The player is situated in a village, placed into debt with the local shopkeeper, Tom Nook, and must exploit resources to repay their debt. Only then are they offered to reenter debt to continue to expand their home improvements while making friends with the other villagers along the way. The resources never fail. There are always more fish and more fruit growing on the trees. The island is never polluted, and the simulated land always repairs itself, ready for another round of harvesting. Models of capitalism never show the rampant oppression that must occur to create this imitated ideal of living. The village in the videogame is always

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7 See https://animal-crossing.com/ and https://www.cheatsheet.com/entertainment/animal-crossing-new-horizons-october-direct-details-you-might-have-missed.html/.

Figure 7   Zoë Fitzpatrick Rogers, *Boundaries + My Inability to Set Them.* 2022.
Hurricane Henri, watercolour, oil on paper, 24 × 18.5"

'free' to be exploited and accumulated from. Peter Linebaugh describes the commons as "[encompassing] all those parts of the Earth that remained un-privatized, unenclosed, a non-commodity, a support for the manifold human values of mutuality" (Linebaugh 2000, 26). The Upper Bay remains un-priva-tised, a toxic inaccessible common resource guarded by hostile architecture.

Ecological practices circumvent these barriers through collaborations of knowledges. They propose alternative models of mutuality and access. Hostile architecture and pollution gain *animacy*. Mel Y. Chen unravels per-ceptions of toxicity and their temporality and defines animacy as a con-struct between living and dead, animate and inanimate, and frames tox-ins through animacy. Borders of public and private landscapes collapse by making tools to access and communicate with a common resource. Toxici-ty is personal, social, political, and environmental. Chen likens toxicity to economic recession. Toxicity becoming a bad "asset". The toxic assets ac-cumulate into a "disabling" stance, where they consume the owner into fi-nancial death. He then counters this with the "multiplicity" of toxicity and its "persistent allure" (Chen 2011).

Chen explores borders, environmental toxins, and their inability to con-tain themselves within a manufactured territory. They make a case for the 'interiority' of borders being crossed, such as the domestic and the self.
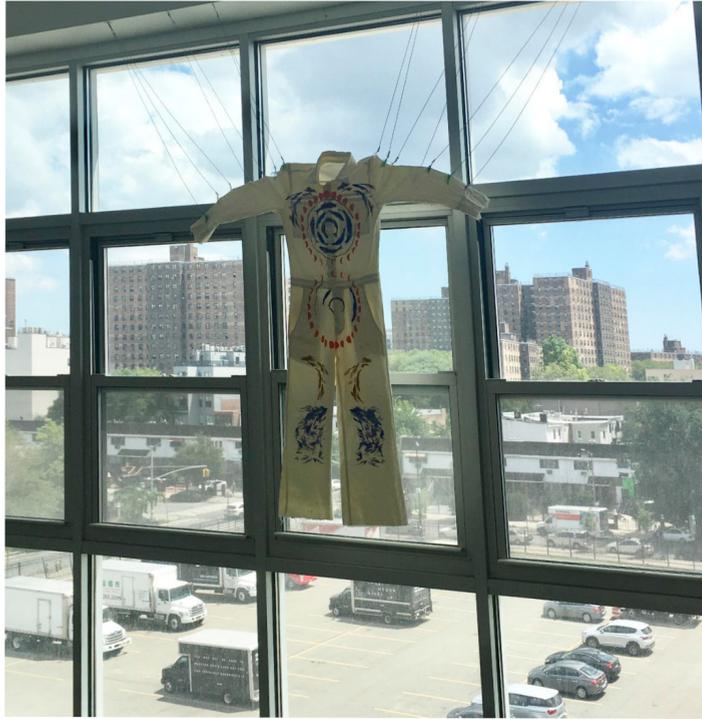
Figure 8
Zoë Fitzpatrick Rogers,
BODY CLOCK. 2023.
Ultramarine blue,
ultramarine violet,
cadmium orange, synthetic
iron oxide, gum arabic
on canvas, steel

Using an example of children's toys being the site of a border crossed, Chen analyses language from an article from the *New York Times*, recording a middle-class mother's perspective on the issue,

> The Affected Thomas toys were manufactured in China [...]. "These are not cheap, plastic, McDonald's toys [...]. But these are what is supposed to be a high-quality children's toy". (269)

Chen unravels the implications in this statement of those holding privilege and wealth deserving of better health or immunity.

Chen focuses on domestic spaces as a site for toxicity, historical and present racism in medical research and care.

> The iconic white boy is an asset that must not be allowed to become toxic: he must not be mentally deficient, delayed or lethargic. His intellectual capabilities must be assured to consolidate a futurity of heteronormative (white) masculinity, which is also to say he must not be queer. (271)

Toxicity does not recognise heteronormativity, or how its presence shifts labour of care, changing "development of able-bodied identities, practices and relations" (271) to undo systems of hyper-capitalism reliant on unrecognised and unvalued labours of care, intimacy, and nurture.

Interconnection led me to research New York's public policy on eating fish from the water. A connected body of water is rendered as inanimate bordered sections with different rules for eating. Robin Wall Kimmerer describes the
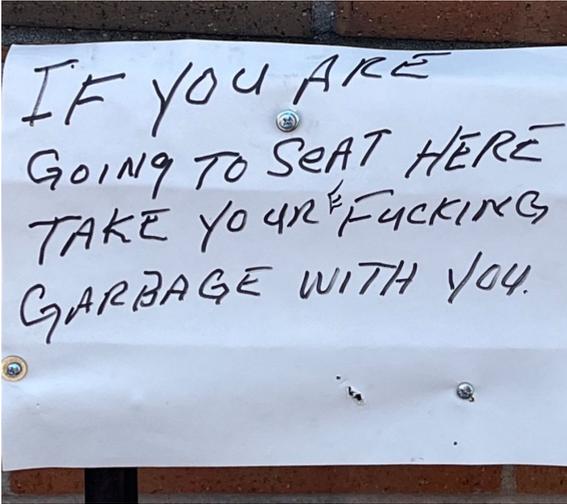
grammar of animacy in Indigenous language structures, translating a body of water into English as "to be a bay" (Wall Kimmerer 2013, 55). English defines water as inanimate. Kimmerer reframes water as animate, a singular, autonomous being that actively chooses which form to take. I read this book when my stomach was not healing after surgery. I could not digest any food. Everything was making me sick. My body was starving me out.

I was infected with antibiotic-resistant bacteria while in hospital. It had gained its animacy by entering water streams in medical waste, mutating in its environment, and entering food streams. I had been touched with an infected glove or blanket when my immune system was suppressed before surgery. It had colonised my body, blocking any nutrients from being absorbed. I took potent antibiotics every six hours for thirty days with no guarantee that I would be able to heal from it. I cannot take antibiotics anymore. My organs are still inflamed. The tracking of toxins in the body, and their animacy, is where my practice intersected with calendars.

Max Liboiron's *Pollution is Colonialism* (2021) helped me to understand what had happened to me personally, and how policies governing resources, spaces, and toxicity are perpetuated on a systemic level globally. I approach my practice through personal experience and the intersection of these issues on a scale beyond myself. As I cited earlier through the example of *Law & Order*, culpability and responsibility are held at the level of the individual in the dominant system of justice. I reframe this fabricated ideology in my practice, considering interconnection and chaos as ecologies. Liboiron writes that

> A core scientific achievement in the permission-to-pollute system was the articulation of *assimilative capacity* – the theory that environments can handle a specific amount of contaminant before harm occurs. (Liboiron 2021, 39)

I translated New York City's policies of thresholds of harm into thirty-day cycles of maximum legal levels of consumable toxicity. This enables a critical examination of the constructs that define 'safe' levels of

toxicity – specifically, the point at which a toxin's concentration is deemed inert within the human body.

The materiality of the works are interconnected. Every material used is linked to the known toxins in the water. I activate raw pigments, researching their sourcing through pigment factories **[figs 7-8]**. Sites such as Dead Horse Bay activate both performance and material research. This ecological practice is a constellation between the city and corporeal knowledge, consciously moving away from Western models that place humans at the top of a hierarchical structure of being, as separate entities from their environments. Instead, it emphasises the ongoing, mutual relationships between humans and their ecological surroundings.

Where Chen's study of a toxic children's toy is considered from the perspective of a white middle-class heterosexual cis-woman, Kathryn Yusoff describes "selective perspectivism" (Yusoff 2018, XIII) in the context of critical geography. Her study explores what is outside of domestic spaces and into common resources. Yusoff references Dionne Brand to explain that the Anthropocene too does not exist in a void:

> it never occurs to them that they live on the cumulative hurt of others. They want to start the clock of social justice only when they arrive. But one is born into history, one isn't born into a void. (Brand, quoted in Yusoff 2018, 82)

Materiality is firmly embedded within the structures of capitalism as a "geosocial [site] of coproduction in which shared histories unfold" (Yusoff 2018, 62). This includes both the Upper Bay and the materiality of the tools that will investigate the water. Yusoff further describes current climate change visibility as a "neocolonial enterprise that continues extraction through displacement of waste" (50). And as a result contributes to "ongoing [legacies] of colonial 'experiments'" (50). Waste displaced into the Upper Bay crosses borders. It becomes sediment and enters food streams. It is reincarnated on the land in the bodies of those who have consumed fish caught from the water. The movement of fish continually disrupts the border. The toxins travel with the fish around the Bay, extending and transferring traces of the chemicals across the bodies of water.

I initiated communication with the New York State Department of Environmental Conservation, who then directed me to the Department of Health. The Bureau of Toxic Substance Assessment ultimately responded to my inquiry. Henry M. Spliethoff, Chief of the Prevention and Sustainability Section, guided me to a PDF outlining that New York City waters are contaminated with PCBs, dioxin, and cadmium. Spliethoff's sole justification for focusing on this specific health issue was that the populations in question are "more vulnerable to health effects from exposure to contaminants". This notion of unspecified vulnerability operates as an ambiguous claim by the Department of Health. It serves as a method of issuing guidance without fully disclosing the ramifications of such pollution on human health. In line with Chen's argument, this lack of transparency contributes to the "development of able-bodied identities, practices, and relations" (McRuer 2006, 88-89 in Chen 2011, 186).

Maxus is the corporation accountable for producing Agent Orange, a herbicide deployed by the U.S. military during the Vietnam War. This chemical was eventually disposed of in waste batches in Newark Bay. The inception

Figure 10 Zoë Fitzpatrick Rogers, *UNTRAINED AMATEUR*. 2022. Marine-grade plywood, salvaged wood, Titebond III, steel, fiberglass, cadmium orange, cadmium red, crap green, iron oxide, ultramarine blue, ultramarine purple, graphite, Thompson's Water Seal, duct tape, fishing net salvaged from Long Island fishery, and rope, 48 × 96". Photo: Martin Seck

of this herbicide drew inspiration from the U.K.'s employment of chemical agents during the 'Malayan Emergency'. In Vietnam, over 20 million gallons of Agent Orange were dispersed to decimate crops and forest canopies. Empirical studies have established that this synthesised chemical is linked to a multitude of health problems, including cancer, congenital disorders, dermatological issues, as well as severe psychological and neurological

complications.[8] The company was purchased by YPF SA, an Argentine company, in 1995 – which gradually transferred Maxus' assets and finally filed bankruptcy in 2016. When YPF SA was asked to pay the State of New Jersey for the costs of environmental clean-up and conservation (Maxus Energy Corp. v. YPF S.A. 2021), "YPF says it isn't responsible for covering the cost of the cleanup. And the bankrupt subsidiary, it says, has no money to pay for it" (Brickley, Morgenson 2018). YPF SA purchased Maxus, moved all of its assets to a different part of the company, and claimed bankruptcy for the section of the company responsible for the environmental damage to avoid accountability. The toxicity of this water directly links to the "ongoing legacy" Yusoff identifies as a devastating weapon manufactured directly out of colonial ideology into a "neo-colonial enterprise" (Yusoff 2018, 50). Leaving decades of transference between environment and the body, court cases have been dismissing Vietnamese victims.[9] Capitalism gains from poisoning common resources and is protected from dealing with the devastation caused by its actions.

2 Trash Goblin Mode

1. undisciplined is a strategy
2. yeah I am intentional
3. going for a lil walk with my lil iced coffee

Ecological practices must be cognizant of the forms of belief shaping them, and as referenced in the first chapter – to what end? With ongoing settler colonialism, I sit in the intersection of being on land I was not born on. Coming from the U.K. as an artist in the U.S., I grew up with Christianity as a dominant culture, and the impacts of many aspects of the belief systems I grew up in, even without personally practicing the religion. Included in this is the idea of works having to perform some kind of purpose, despite being embedded in an oppressive system.

Claire Bishop wrote that

> the discursive criteria of socially engaged art are, at present, drawn from a tacit analogy between anticapitalism and the Christian 'good soul'. […] This self-sacrifice is accompanied by the idea that art should extract itself from the 'useless' domain of the aesthetic and be fused with social praxis. (Bishop 2006, 67)

While many art practices are related to this, ecological practices must be especially aware of the belief systems informing them, and internalised values that may be harmful or irrelevant.

I am implicitly connected to a toxic environment in the city, and I love living in the city. I know when I am biking, I inhale toxic fumes. I know that the trains I ride and the plastic coffee cups I use are terrible. I ingest the city, leaving geologic traces in my body, and it stays with me. I know I am

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[8] See Frumkin 2003; Martini 2012.

[9] See, for instance, https://www.aljazeera.com/news/2021/5/12/agent-orange-case-after-defeat-woman-79-vows-to-keep-up-fight.

Figure 11   Zoë Fitzpatrick Rogers, *UNTRAINED AMATEUR*. 2022. Handmade boat. Performance, duration variable.
Dead Horse Bay, Brooklyn, New York. Image courtesy of Charles Park

also leaving geologic traces in the city with my presence. I am inherently flawed in how I live versus what is happening environmentally in the city. We are deeply entrenched in each other. I am not separate **[fig. 9]**.

The works I make are about geological movement and change, and human boundaries placed on waterways being ineffective. They are also about the body being in this relationship with a transmuted environment. I have an inability to be 'good' in a time of ecological despair. There is possibility in transforming in this and understanding and being accountable to the ecologies that are present and connected in every artistic practice.

James Voorhies (2023) reframes contemporary artistic practices in *Postsensual Aesthetics. On the Logic of the Curatorial* through case studies of Documenta, and defines practices as being cosmologies, or constellations. Voorhies describes fugitive art as

> work that boomerangs from the field of art to siphon the knowledge of other fields, get the expertise it needs, and then bring it back as an integral part of presenting work in the public realm. (43)

In this context, I consider that ecological practices are fugitive art, engaging with multiple disciplines and approaches to materiality and concept. Voorhies also questions the function of art as Bishop did in 2006, considering:

> What role can art play – presupposes that art should play a role, that it should function. And on the spectrum of functionality, the leading role it is asked to play is a critical one. All of this becomes more muddled as prominent contemporary art in the form of cultural entertainment meets the experience economy, which the field of art at present upholds economically and culturally. (43)

The constellations of ecological practices engage with even the unethical parts of being in a transmuted ecology. The systems artists constantly engage in outside of exhibitions inform the cosmology. Voorhies describes "deeply integrated and largely invisible modes of collaboration" (43), which ecological practices are especially interconnected with. The artist and the works become part of the ecosystem within the cosmos of the environment and of the artist's practice.

Untrained Amateur was my initial project related to the water I worked on from 2020-22 in an attempt to gain access to the water. With a boat I built using plans I bought for $20 online. I painted the wood with oil paints I made with toxins matching pollutants in the water **[fig. 10]**. I navigated city bureaucracy health and legal access policies.

The boat plans are designed by Ken Simpson, a retired Mechanical Engineer based in Arizona. The search for a suitable and economical boat design was extensive, as I was looking for material requirements, dimensions, and suitability for sailing on the East River without any prior experience or knowledge. This process moved me outside of my area of knowledge of materials and construction techniques in relationship to the body. It required me to become precise in visualising the complete process of fabrication in relation to industrially manufactured materials. I had to ensure that a safe and functional sculpture would be made. *Untrained Amateur* disrupted the literal facticity of a boat. It is an interrogation of the craft behind a successful functional structure. It is an artefact as a vessel and as a tool for access. I hacked pre-existing factual plans to transform them into a live interrogation of the privatisation of the water.

As I researched the Marine Grade Plywood I purchased, I had opted for the most affordable material. It is yet another moment that uncovers literally the entanglement of problems addressed in this project. *Meranti*, native to Southeast Asia and mostly critically endangered, is grouped within the 196 species of *Shorea genus*, named after Sir John Shore (1793-98), governor-general of the British East India Company. In attempting to make the work affordable, I had potentially purchased wood that is contributing to deforestation and displacement of Indigenous communities in Indonesia. The boat cannot be separated from the history of its material sourcing. The materiality of the boat is firmly embedded within the structures of capitalism and does not exist in a void. It is inextricably locked within the histories of extraction.

In researching deeper into the standardised manufactured plywood received on the back of a truck in Brooklyn I uncovered a symptom of the very issues that the project is built to interrogate. How can materials be truly ethically sourced and accessible through their modes of production and affordability? My source, Roberts Plywood, advised that I had purchased *Shorea parvifolia* which is currently listed on the International Union for Conservation of Nature and Natural Resources as being a material of 'Least Concern'. The website providing this information is funded by Toyota Motor Corporation.

Muscle memory, spatial memory and emotional memory are embedded in craft. The definition of craft leans to *cheating*, and *cunning*, as manipulation of material could be interpreted as deceitful. I used *cunning* and *bandwitch* to hack craft, learning the rules of building a boat and disrupting them, through flaws, growth, inexperience, and unrelenting iterations of investigation. I learned the rules of the public water and aligned the project within the parameters, while conceptually still existing within contention

Figure 12 Zoë Fitzpatrick Rogers,
I JUST WANTED YOU TO KNOW. 2023.
Cadmium yellow, cadmium orange,
crap green, ultramarine purple,
salvaged glitter, graphite,
iron oxide on linen

of the city. The boat is a form of connection to the water. It is a desire to intervene in historical sedimentary presence while remaining specific to its own material history. It transfers its form beyond a functional tool. A transformation of communication through performance; the nature of collaboration happening within the vessel.

During my performance at Dead Horse Bay **[fig. 11]**, a closed landfill site in Brooklyn, a NYPD helicopter began circling the water. In summer 2023, I helped to teach a week long sailing program to a group of children from public schools across Brooklyn in their handmade boats in Sheepshead Bay, at a private yacht club that loaned its space to us. On the third day of programming the Commissioner of the New York City Department of Parks and Recreations directly contacted us and ordered us to stop using the water, as we allegedly did not have the correct permit for an unused dock that we were accessing. Surveillance by the local community had directly contacted the Commissioner to stop children from the same neighborhood accessing public water. We built a floating dock as a circumvention of this law enforcement. A NYPD helicopter circled above us on our last day as we left the water. Accessing New York City waters is heavily surveilled and policed, and my practice, as an ecological constellation, engages with addressing the interconnection of these systemic constructs.

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Coda

Geological Pasts, Speculative Futures: A Conversation with Beate Geissler and Oliver Sann

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Beate Geissler and Oliver Sann are Chicago-based artists and educators whose interdisciplinary work has evolved over the course of two decades. Working across diverse media – from photography and video to performance art – their thematic focus is as expansive as their choice of mediums. Their recent work, titled *How Does the World End (for Others)?*, is a prominent inclusion in the 2023 exhibition *Everybody Talks About the Weather*, curated by Dieter Roelstraete at the Fondazione Prada in Venice.

How Does the World End (for Others)? is an interdisciplinary project with multiple components and iterations. Central to this work is what the artists describe as a 'score', a text structured as two distinct timelines. The first, titled "The Deluge", commences with a scriptural citation to *Genesis* 6-9 and unfolds into a chronologically-arranged vertical timeline of geological and planetary milestones. This account of planetary geo-history includes the sections "Deep History", "Explosion of Life (Cambrian Period)", "The Holocene", "Modernity", and "The Great Acceleration". Notable entries include, for example, a point marked "4.44-4.41 Ga BCE", which annotates the moment when "Water vapor enters the atmosphere, creating oceans (potentially resulting from volcanic gas emissions or ice from comets)"; or another point when "1520s-1530s Iberian transatlantic slave trade from Africa to the Americas begins". With the emergence and development of human societies, the timeline diversifies to encompass seminal literary works – ranging from *The Odyssey* and the Icelandic Sagas to Mary Shelley's *Frankenstein* and J.G. Ballard's *Concrete Island*, just to name a few. It also includes indicators of the impact of human activity on the planet's geophysical strata – such as "1900: CO_2 levels rise to 296 ppm, surpassing Holocene variability" and "1984: The Bhopal pesticide plant releases 30 tons of toxic gas, considered the world's most severe industrial catastrophe".

The latter section of the score, titled "Fragments", consists of a curated compilation of excerpts, summaries, and citations drawn from 47 literary and cinematic works that project the reader into 47 different future worlds. Predominantly anchored in the genres of science fiction and cli-fi (climate fiction), this segment features an array of influential works. Films such as Richard Fleischer's *Soylent Green* (1973), George Miller's *Mad Max* (1980), Roland Emmerich's *The Day After Tomorrow* (2004), and Zhenzhao Lin's *Restart the Earth* (2021) are included. Likewise, the section integrates literary texts, featuring Neville Shute's *On the Beach* (1957), Octavia Butler's *Parable of the Sower* (1993), Cormac McCarthy's *The Road* (2006), and Jeff VanderMeer's *Annihilation* (2014). Through the artists' meticulous arrangement, these selected texts adhere to a unique form of chronology of futures. The timeline commences in the year 2022, as represented in *Soylent Green*, and culminates in the year 2393, the chronological setting of Erik M. Conway and Naomi Oreskes' *The Collapse of Western Civilization* (2014). The chronological arrangement employed by the artists cultivates a sense of narrative progression and urgency that immerses the reader or viewer in a temporally-extended contemplation of futurity. It fosters a palpable sensation of moving through time, exposing the audience to evolving notions of planetary degradation, social upheaval, and existential risk as they are conceived in each text. Consequently, it engenders a meta-narrative where the real-time unfolding of these speculative and fictional futures serves as a mirror to contemporary anxieties and debates, thereby collapsing the temporal distance between the now and the *not-yet*. This provides a compelling counterpoint to more static or non-linear methods of presentation, enacting its own form of storytelling about how contemporary societies imagine, dread, or anticipate futures conditioned by our present actions.

The interplay between the two timelines – planetary geo-history and speculative futures – offers a diachronic inquiry into human agency and its imbrications with natural history. The first timeline, studded with geological milestones and markers of human impact, serves as an evidentiary backbone that underscores the gravity and scope of anthropogenic interventions within the planet's *longue durée*. It functions as an archive, positioning the human within a lineage of Earth's transformative events, thereby emphasising both the entanglements and the magnitude of industrial activity in geological time.

Contrastively, the second timeline moves into speculative futures, transitioning from history to imagination, from empirical markers to narratives of potentiality. It introduces the element of futurity as a significant variable in understanding human-nature relationships, urging the viewer to confront not just the historical facticity but also the imaginative possibilities of impending scenarios.

In juxtaposition, the two timelines create a dynamic tension between what has been empirically verified and what exists in the realm of speculative foresight. This duality sharpens the discourse on the Anthropocene by blending the empirical and the imagined, the factual and the speculative, into a dialectic that stretches from the primordial past to the dystopian and utopian futures. The juxtaposition acts as an epistemological challenge: it insists that understanding our position in planetary history requires both a rigorous account of the past and an imaginative grasp of the possible futures that are imagined by literature, cinema, and the arts.

Figure 1 Beate Geissler and Oliver Sann, *Untitled*. 2013. Photograph accompanying the score and the installation *How Does the World End (for Others)?*, digital photograph. Courtesy of the artists

EMILIANO GUARALDO   I'm curious to know more about your artistic trajectory and how your work evolved to include environmental concerns.

BEATE GEISSLER   We met while studying photography in Munich. Over time, we found ourselves drawn to a range of subjects like the influence of the military-industrial complex in global politics, gaming culture, and the role of technology in human life. Our approach has always been rooted in research, and gradually, we started incorporating elements of dramaturgy and scriptwriting into our work.

Our work has consistently been multidisciplinary, combining studies on the military, financial, and chemical industries. We have especially explored the financial industry in depth, a venture that put us face to face with the coercive power of big capital, which was an eye-opening experience for us.

EG   It seems that you consider these different sectors – military, financial, chemical – not as disparate entities, but rather as nodes in a broader matrix of systemic logics, and maybe as manifestations of the same epistemological foundations that perpetuate power relations and structural inequalities.

OLIVER SANN   Precisely, these sectors are not as discrete as they might initially appear. The confluence of finance, military industrial ventures, and chemical industries can often be considered facets of a more extensive network. A sort of capillary system that feeds into the larger architecture of contemporary capitalism and governance.

BG   The framework may differ but the underlying principles often do not. Our personal transition from Europe to the United States really heightened our understanding of capitalism as not just an abstract term, but a palpable, omnipresent force. In Chicago, we *felt* capitalism; it's an entirely different encounter when you are in its locus.

And it's in these epicentres that one understands how systems of finance become a sort of 'remote control', not only governing internal mechanisms but also exerting influence on a global scale. It's a network that manages to permeate national boundaries, and this remains a focal point of our artistic practice.

Our focus on environmental issues became more pronounced after our engagement with Haus der Kulturen der Welt's Anthropocene Curriculum (AC) and our residency at the Max Planck Institute. We began our collaboration within the AC with a video trilogy called *Hopium Economy*, which examined planetary processes through the lens of addiction. The residency at the Max Planck Institute gave us the opportunity to weave together these diverse threads – capital, technology, and human agency – into a more focused conversation on the Anthropocene.

EG   The collaborative aspect appears crucial, particularly within the context of the Anthropocene Curriculum, or its new incarnation as Anthropocene Commons. This initiative has pioneered the transdisciplinary and creative approach towards understanding planetary transformations where different types of knowledge production intersect and collaborate.

OS   The experience of working within this interdisciplinary research framework was transformative. We weren't confined by the commission-based models that often restrict artistic agency. This newfound freedom led to a fusion of realms, where artists and scientists could genuinely learn from one another. This isn't only supplemental; it's a transformative, dialogic process, breaking away from older paradigms where artistic contributions were limited to merely illustrating scientific discourse.

BG   Interdisciplinary collaboration allows us to delve deeper into reflecting on methodologies and hierarchies that often go unquestioned. It's

an intellectual togetherness that challenges the conventional value systems ingrained in both the arts and the sciences. And in that shared space, artists contribute by asking questions that others might not – whether through a social critique or even a monochrome painting. It's an alternate way of interrogating our co-existence within this shared ecological space.

OS   This is a significant cultural shift. Artistic research is now being received as being complementary to scientific endeavours. And this recognition allows us to focus on generating substantive content, not merely contributing to the 'hipness factor' that sometimes pervades exhibitions concerned with environmental issues.

EG   Have you observed a growing focus on environmental and planetary issues within the contemporary art system? Is this rising attention primarily driven by the marketability of these themes, or is it a manifestation of the underlying anxieties the public holds regarding the current environmental crisis?

OS   Contrary to what one might think, I haven't found that the art world has universally embraced genuine environmental awareness. However, the number of exhibitions addressing these issues is indeed increasing.

BG   Indeed, the proliferation of such exhibitions is an observable fact. This leads to the question of how we can foster connections between these institutions and facilitate knowledge sharing, thereby cultivating a dynamic and intellectually enriching discourse. At the present, it appears that environmental themes are gradually garnering a much-needed recognition within the arts, predominantly in response to the pressing demands of our contemporary world.

This prompts us, once more, to consider how research-focused engagement can both underscore the importance of these environmental issues and drive inevitable transformational changes through collaborative efforts in our world.

BG and OS   There appears to be a tendency to approach the subject from what might be considered a fashionable standpoint, rather than a critically-engaged, research-oriented perspective. But even so, any form of engagement is essential, because the urgency of the environmental crisis mandates collective action. We appreciate any initiative aimed at addressing these issues, as it adds to a multitude of voices advocating for changes that are urgently required. The broader the participation, the more likely we are to effect substantial and meaningful change.

EG   How do you see artistic practices contributing to producing and disseminating ecological knowledge?

BG   There is no doubt, the arts possess a reservoir of untapped creative potential, especially when it comes to presenting heterogeneous narratives around ecological crises. Artistic research is not simply about generating artworks, but an all-encompassing ecosystem of creative thought and expression. Most artists, unlike many other producers of knowledge, can afford failure more readily and are therefore not paralysed by fiasco. As a result, art is not afraid of failure. On the other hand, artistic outreach does not initially need to provide explanation and can therefore rely more on empirical freedom and experimentation. Innovativeness allows us to venture into experimental terrains,

making our work both cerebral and visceral. In this way, the arts can indeed act as a nexus for diverse knowledge transfers, emotional engagements, and critical thought, challenging societal expectations while also enriching all layers beyond what is considered art.

EG Your project *How Does the World End (for Others)?*, as I perceive it, relies on the duality of performance and the exhibited object, treating them as equal constituents in the overall economy of the artwork. The dialectic between the two forms seems to embody a sort of parable, whereby the two are interconnected and interdependent, contributing to a single, unified narrative.

OS This is especially true in the context of the installation at Fondazione Prada in Venice. This particular iteration of the artwork accentuates its temporal dimensions. If you engage with it walking along and reading it, you traverse multiple temporalities. It creates a peculiar experience of time-jumping that, when, for instance, shared between two visitors, offers a sense of dislocation and new possibilities.

BG We faced a choice: should the presentation be linear or embrace a more chaotic form? I'm pleased that we ultimately chose a linear presentation, as it provides a pathway towards greater clarity and interpretive coherence, or at the very least it pretends to do that.

The timeline not only projects you into the future but collapses distinctions between past, present, and future into a sort of eternal present. What has grown increasingly compelling for me is the narrative structure that emerges. The repetition of stories, whether it's a catastrophic flood or a biblical account, raises the question: Is the essence of these narratives in their unique details or in the recurring structural elements that they share?

EG The motif of floods carries potent symbolism in the context of Venice. I see a strong resonance between your work and other pieces in the exhibit. Your work dialogues with Theaster Gates' video *The Flood*, and it aligns with Giorgio Andreotta Calò's probe into the geological temporality of the Venetian lagoon with his *Carotaggi* (Core Samples). Your timeline serves as an intellectual and physical bridge between these thematic explorations, inviting audiences to contemplate the cyclical and linear dimensions of geological time, existential disaster, and situated experiences of planetary time.

OS It did indeed harmonise well with the surrounding artworks. There are two co-existing modalities in our timeline. One leans into the archetypal, capturing universal narratives like floods, while the other taps into the unprecedented realities we're collectively steering towards. It's this dichotomy that enriches our understanding of the piece and the exhibit as a whole. To reside in the Anthropocene is to dwell within a labyrinth of paradoxes. On the one hand, we encounter phenomena that were previously unfathomable, breaking the boundaries of what we understood to be "natural". On the other hand, this epoch also prompts a reexamination, a plunge into the sedimented layers of culture and civilisation that have shaped our understanding of the environment.

EG   This tension also materialises in the discourse around climate science, particularly in the public sphere. Even as we endure exceptional heat waves, public discussions often trivialise them as merely another hot summer. In this respect, climate fiction serves as a counter-narrative by depicting dystopian futures where Earth's habitability is irremediably compromised. What guided your selection of the texts and films that comprise your body of work on this subject?

OS   Our method of selection was less deterministic and more explorative. We were led from one text to another, drawn by their respective articulations of climate-related themes.

BG   One thematic arc that resonates with me is that of dreams – or perhaps, the loss thereof. The collapse of the imaginative space for future possibilities is, I believe, an urgent narrative that we must integrate into our broader conversations about climate change.

OS   The storytelling aspect brings forth an additional layer of complexity. Most narratives, by their structural imperative, must conclude – either on a note of doom or hope. However, the unending, ever-escalating nature of the climate crisis disallows such closure, problematising how we engage with it through art and literature.

EG   I see you've also incorporated films into this ecology of narratives. How does the practice of scriptwriting, as a unique form of storytelling, intersect with your scholarly interests?

BG   Our professional leanings have predominantly been toward performance art and theatre, not scriptwriting per se. However, the performative aspect exists in all these forms, and it's a domain we've navigated in our past works. Our project remains in flux; it's an ongoing dialogue rather than a definitive statement. While we initially contemplated concluding with a more sombre work, Erik Conway and Naomi Oreskes' bleak vision of the future, we opted instead for *Ecotopia* – a narrative that offers alternative lifestyles as sites of resistance and hope in an otherwise dispiriting landscape.

EG   This dichotomy is evident in art forms engaged with the climate crisis. We often observe a paralysing apocalyptic vision that potentially serves to justify inaction. But there is also a more proactive corpus that seems to propagate a message of agency, encouraging alternative lifestyles and engagement with the planet. Does this tension manifest itself in the narratives you have curated and the dialogues you have been a part of?

OS   Most certainly, the tension you articulate is something we have been deeply mindful of, particularly given the ethical complexity of ecological discourse. We made a conscious decision to eschew simplistic moral or ideological finger-pointing. The literary landscape on this issue is surprisingly vast, dwarfing even mainstream cinema, and varies widely in its ideological stances. To allow the works to speak for themselves and interact with each other in a non-prescriptive manner, we opted for a chronological arrangement. This methodological choice unveiled a third narrative dimension, one characterised by temporal intersections that generated novel meanings and interpretations.

EG   Your chronological ordering struck me as a potent intervention in how we encounter these narratives. It appeared as if this arrangement manifests a new narratological function, transforming climate fiction into something altogether different. The works didn't just exist in isolation; they were part of a larger dialogue that only became apparent through your ordering.

BG and OS: Yes, and what's fascinating is that this effect does not necessitate reading the entire collection; even a partial engagement alters the reader's interpretative framework. It's similar to the experience one has when reading a choral novel. Our intention was to place these divergent narratives in conversation, allowing for a multiplicity of emergent meanings.

EG   Alongside the timeline, you have also integrated images of what can only be described as techno-vegetal hybrids.

OS   Conventional timelines, especially the more recent ones, often integrate pictorial elements to illustrate key historical or speculative moments. In a way, we wanted to subvert that tradition, introducing images of hybrid beings that don't exist but feasibly could, at least within the confines of the technological imagination. These visuals act less as illustrations and more like enigmatic entities that disrupt linear understanding, making them a riddle unto themselves.

BG   We also view these elements as integral to the project's overall 'score.' There's notable potential in the hybrid methodology, which gains a sort of 'character-like' potency within the work. Our aim is to explore various archival forms – serving both as keepers of time and custodians of history. These elements function like visual footnotes, creating a point of convergence for historical and chronological aspects, thereby adding another layer of meaning and interpretation to the images.

EG   It has been said that plants offer a counter-narrative to the anthropocentric capitalist models that have precipitated the climate crisis. Unlike the competition-driven ethos of capitalism, plants embody a more collaborative model of existence, rooted in symbiosis and mutualism. Thus, in the speculative ontology of your artwork, plants serve as both a critique and an alternate model for planetary futures. This resonates with certain science fiction genres like solarpunk, which seek to envision a future characterised by a harmonious relationship with natural energy sources – plants, after all, have been harnessing solar energy since their advent on Earth.

OS and BG   Absolutely, our intention was never to represent anything "real" or "existing", but rather to engage in a form of radical imagination. We used the medium to ponder alternate narratives, to stretch the boundaries of what could be rather than what is. Your observations validate the speculative utility of the artwork, its ability to participate in multi-discursive debates around ecology, technology, and futurity.

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Notes on Contributors

Cristina Baldacci is an associate professor in History of Contemporary Art at Ca' Foscari University of Venice. She is an affiliated faculty member at THE NEW INSTITUTE Centre for Environmental Humanities (NICHE), where she coordinates the Ecological Art Practices research cluster. Her research interests focus mainly on the challenges of archives and of art institutions, histories and practices in the Anthropocene; on the archive as a metaphor and art form; on the strategies of appropriation, montage, and reenactment in contemporary art; on visual cultures and the theory of images – all topics on which she has extensively published.

Pietro Consolandi is an artist and researcher based in the Venice Lagoon. He is co-founder, alongside Fabio Cavallari, of Barena Bianca: an art and ecology collective active since 2018 that strives to strengthen meaningful connections between humans and ecosystems, in Venice and other kin regions of the world. He is a Research Fellow at THE NEW INSTITUTE Center for Environmental Humanities (NICHE), Ca' Foscari University of Venice, where he studies the possibility of Rights of Nature in Venice and in the Italian hydrological networks. He has been involved since 2020 with TBA21–Academy, where he is now OCEAN / UNI Research Lead, developing transdisciplinary didactic programmes that blend art, ecology and embodied knowledge. He holds an MSc in International Political Theory at the University of Edinburgh, and an MA in Visual Arts at IUAV University of Venice.

Concepción Cortés Zulueta is a postdoctoral research fellow at Universidad de Málaga, Spain. She received her PhD in art history from Universidad Autónoma de Madrid. Her research, interdisciplinary in its scope, focuses on the presence and agency of nonhuman animals in contemporary art and audiovisual culture, and addresses them as authors and creators. She leads the research project *Entomornithophilias (and Phobias): Impressions and Encounters of Birds and Insects*, Plan Propio UMA. She has published many chapters (Routledge, Palgrave Macmillan, Brill, Leuven University Press, Plaza y Valdés) and articles (Society & Animals; Goya; História, Ciências, Saúde-Manguinhos; REGAC) on these topics, and she co-edited, with Reyes Escalera, a special issue of *Boletín de Arte* on Animals and Art History. She has made research stays at Sapienza Università di Roma; the National Art Library (Victoria & Albert Museum); Museo Nacional de Ciencias Naturales (Madrid); the New Zealand Centre for Human-Animal Studies (University of Canterbury, Christchurch), and the Massachusetts Institute of Technology, among others.

Matthew Darmour-Paul is a researcher and designer living on the lands of the Eora and Darug people in Sydney, Australia. His work explores architecture's entanglement within political ecology, ruralisation and the financialisation of nature. He is a cofounder of Feral Partnerships, a collective focused on re-claiming architectural knowledge in an age of rapid biodiversity

loss as a spatial practice in the pursuit of multispecies flourishing. He has a BA in Architecture from Iowa State University (USA) and holds an MA in Architecture from the Royal College of Art (UK). He teaches architecture at the University of Sydney and the University of Technology Sydney. He has worked with artists, architects, sociologists and anthropologists in the UK, Denmark, and Australia.

Zoë Fitzpatrick Rogers is a New York City based interdisciplinary artist, working across traditional folk art methodologies and contemporary socio-political infrastructures. Her practice of researching geological structures of materials and their relation to the logic of late capitalism informs her process of collaging, layering, and redacting speculative ecologies. Through this she transforms the logic of water in the city from a private, fixed entity to a public, collective, active body, and site of ongoing contention. She has recently participated in Woodward Artist Residency (2023), and Saas-Fee Summer Institute of Art's Deep Ecology in the Cognitive Capitalocene and Beyond (2022). Rogers was an Artist in Residence at Birmingham City University (2018-19), and completed her MFA in Fine Art in 2022 at Parsons School of Design.

Tommaso Gonzo holds a Master's degree in Contemporary Art Theory from Goldsmiths University of London. His work explores the interplay between migration, ecology, power structures and colonialism. Drawing from decolonial ecology, new material feminism, botany, and contemporary art, his transdisciplinary research focuses on cross-species collaboration and queer interspecies sexuality. Gonzo seeks to understand the disconnection between human communities and their natural environment and the emergence of unforeseen, regenerative ecologies resulting from adaptation in response to colonisation, displacement and anthropogenic global warming.

Emiliano Guaraldo is a postdoctoral research fellow at NICHE, THE NEW INSTITUTE Centre for Environmental Humanities at Ca' Foscari University of Venice. He earned his PhD from the University of North Carolina-Chapel Hill in 2019 with a dissertation focused on the visual and literary representations of petroleum in the Italian context. His work seeks to understand the historical, aesthetic, and political dimensions of extractivism, planetarity, and toxicity within the transmedial imaginations of the Anthropocene. With Marco Malvestio and Daniel A. Finch-Race, he is the editor of the volume *Italian Science Fiction and the Environmental Humanities* (Liverpool University Press, 2023); and with Cristina Baldacci he is curating the special double issue of *Holotipus* journal "Archiving the Anthropocene: New Taxonomies Between Art and Science" (2023, 2024). He is a member of the research collective Unruly Natures (Switzerland) and of the Ecological Art Practices research cluster at NICHE.

Giovanni Lorenzi holds a Master's degree in Environmental Humanities from Ca' Foscari University of Venice. His research interests encompass environmental anthropology, political ecology, and the Environmental Humanities, focusing on topics such as water and chemical contamination, waste, environmental justice, and environmental degradation, within the interdisciplinary field of science and technology studies (STS). His thesis delved into an ethnographic investigation exploring how the agricultural sector in the Veneto region, Italy has encountered and navigated the challenges posed by per- and polyfluoroalkyl substances (PFAS) contamination.

Giulia Melchionda holds a Master's degree in Environmental Humanities from Ca' Foscari University of Venice. Her thesis focused on contemporary artistic expressions influenced by invisible radioactive and nuclear landscapes. She also obtained a degree in Italian Literature from the University of Macerata, where she explored the anthropological and textual construction of the female hero in medieval French poetry. She is an editor for Edizioni Malamente, where she specialises in radical political thought, social critique, and narratives depicting 'popular' history and diverse territories.

Ludovica Montecchio is a Master's student in Environmental Humanities at Ca' Foscari University of Venice. She completed her BA in Languages, Literatures and Cultural Mediation at the University of Padua, culminating in a thesis in sociolinguistics on the deceitful com-

munication of post-truth politics and media. This background allowed her to develop her sensitivity for social issues and communication, which during her MA were later combined with environmental science, art, and a lifelong passion for the ocean, leading her to research more in the field of the Blue Humanities and multispecies ethnography. A prime example of this interdisciplinary research is her contribution to the Ocean / Uni Virtual Fall semester of 2022, at the end of which she published the creative project *Lagoon Letters* on the Ocean-Archive, co-written and graphically rendered with her colleague Benjamin Lewin. The project is an attempt to give a voice and agency to the more-than-human lagoon.

Rebecka Öhrström Kann is an art historian based in London. They received their double BA in Art History and Photography from Columbia College Chicago in May 2022 and are currently completing their MA in Art History at The Courtauld Institute of Art, London. Their areas of scholarly research include the materiality of memory, the intersection of art and ecology, queer art and theory, and the fluidity and mobility of images. Kann has previously held the role of curatorial and exhibitions assistant at the Museum of Contemporary Photography, Chicago, and worked as a McMullan and Academic year intern in the Photography and Media Department at The Art Institute of Chicago in 2022-23.

Sam Risley is an artist and researcher who works across moving-image, installation, sculpture and written text. He has an MA in Artists Film and Moving Image from Goldsmiths University, having previously studied at the Slade School. With a focus on moving image, his work centres around narratives of renewal, with a recent focus on ecological restoration within landscapes shaped by violent capitalist practices. Alongside his art practice he works as a carpenter, which has informed his research through a hands on and tangible comprehension of the politics of material use and wild space. His work has been exhibited at Rencontres Internationales Paris-Berlin, The Baltic, The Horse Hospital, APT Gallery, Sluice Biennial and IMT Gallery among others.

Davide Tolfo is an independent researcher based in Venice. He wrote extensively for online platforms, such as *NOT*, *il Tascabile*, *Koozarch*, *LaDeleuziana*, and *Il lavoroculturale*, and his essays have been published in journals, such as *Scenari* (Mimesis) and *Versus* (Il Mulino), as well as by publishers Marsilio Editore and D Editore. Concurrently, he worked as an artist assistant for Shubigi Rao as part of the Singapore national participation during the 59th International Art Exhibition - La Biennale di Venezia in 2022, and he is currently collaborating with Ocean Space.

The Future Contemporary

1.   Franco, Susanne; Giannachi, Gabriella (eds) (2017). *Moving Spaces. Enacting Dance, Performance, and the Digital in the Museum*.

Exploring the intersection of contemporary art, ecology, and non-human perspectives, this volume, featuring scholars and artist-researchers, rethinks traditional narratives in the face of ecological crises. It critically examines human-centric ideologies and environmental exploitation, engaging with issues of racial capitalism, colonial legacies, and the making of the Anthropocene. The collection highlights art's potential role in exposing ecological injustices and envisioning new, sustainable ways of coexisting with non-human subjects on our planet, promoting collaborations between forms of knowledge across disciplinary divides.
Can art be the catalyst that redefines our relationship with the planet and its myriad inhabitants in the face of unprecedented existential challenges? What types of knowledge can be gained from collaborations with biological, geological, and technological subjects?

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