

Contested & Erased Energy Knowledges : University of Dundee

Thu 31 October – Sat 2 November 2024

Long Conference Programme

Day 1 : Thursday 31 October

Introduction and Conference Welcome

Natasha Lushetich with Joel White and Rowan Lear

ENERGY: A (Philosophy of) Practice

9–9:35am GMT

Panel 1

Chair: Joel White

Counter Energies

9:45–11:15 GMT

Rosemin Keshvani

CENTRE FOR RESEARCH IN MODERN EUROPEAN PHILOSOPHY (CRMEP), KINGSTON UNIVERSITY LONDON

Kant, Dynamics, Mechanics and Life

This paper explores how the epistemic paradigm articulated by the philosopher Immanuel Kant which implicates and progresses an epistemology of control premised upon predictability and repeatability. The forces underpinning this epistemic model, however, are themselves grounded in the unresolved tension between the Newtonian conception of mechanical force and what Leibniz identified as living forces or *vis viva*. This inherent but suppressed *aporia* eventuates an episteme that is dynamic and productive, such that it eventually engages its own collapse. Kant recognised this *aporia* and came to doubt that scientific inquiry, however powerful, could ever provide an explanation for the origin and emergence of life. Thus in 1790, in the final paragraphs of his *Critique of Judgement*, he concludes there will never be a Newton to explain to us, in terms of natural laws unordered by any intention, how even a mere blade of grass is produced (§75:401). Kant's endeavour to critique life led him to comprehend the limitations in the Newtonian world view and in his later philosophy to engage critically with life as a productive force that interprets law dynamically and functionally. The question that Kant raises is whether life is the force responsible for this trajectory and if so, how life, *qua* force, may be theorised?

Finian Worrall

CRMEP, KINGSTON UNIVERSITY LONDON

Energy as Ecological Currency: The Economic Approach to Ecosystem Science

My paper examines the ethical and political implications of the use of the concept of energy in ecosystem ecology. I argue that the theoretical advantage of the energy concept, as Hutchinson writes, lies in the reduction of all interrelated biological events to energetic terms (1942: 417). It offers ecologists a simplified, physical view of natural systems more in line with physics and engineering than previous ecosystem approaches. Energy could be used as a quantifiable, universal currency applied across any spatial, temporal, or historical context. This allowed ecologists to generate models that simulate and analyse ecosystems with the help of computers. The concept of energy therefore, as historian Worster writes, turned out to be the key that opened the gate to the economic approach (1994: 311). Such an approach emphasises quantifiable metrics in order to set up linear cost–benefit calculations that are easily implementable in policy and in ecosystem management programmes. My

Panel 2

Chair: Natasha Lushetich

Diffractions and Spacetime Matterings

9:45–11:15 GMT

Stephanie Gray

GLOBAL CENTRE FOR ADVANCED STUDIES

Entangled Jewish Temporalities: Zionist Settler Colonialism in the Anthropocene

The ongoing genocide and ecocide of the Gaza Strip since October 7, 2023, has illustrated the ever-entangling relationships between the human and non-human life of the Eretz Yisrael (the land of Israel). The compounding impacts of climate change, environmental degradation, and ethnic cleansing of the Palestinian people are reaching toward the irreversible. Can a Judaism beyond Zionism provide new ways to energise discourses of political liberation, decoloniality, and ecological relation to the earth? Zionism as a form of settler colonialism relies on a progressive linear temporality, as well as a strong form of Jewish and Christian messianism to support its claims to the *Medinat Yisrael* (the nation-state). Using Barad's work along with that of Benjamin, this paper challenges the presumption of linear time and contrasts weak messianic energy with strong Zionist messianic nationalism (Barad 2017). Here the weak messianic energies of a diffractive temporality are linked to a diasporic and multi-rooted Judaism freed from Zionism (Naar 2023). This diasporic Jewish time, land, and energy constitute a decolonial view of Jewish politics and identity.

Pedro Brea

UNIVERSITY OF COLORADO (BOULDER & DENVER)

Energy and the Past that was Never Present

Through the work of Barad, I outline the failure of substance ontology and the metaphysics of presence to provide an adequate account of quantum entanglement and complementarity, as well as their failure to reconcile evolution by natural selection with the laws of physics. Since the concept of energy emerged from the ground of substance ontology, I will argue that the temporality of energy must also be reimagined along the lines of a process metaphysics to provide a more adequate account of the phenomena in question. I do this by supplementing the work of Barad with that of Bergson, Deleuze, and Whitehead. I will explore the possibility of a concept of energy grounded in an ecstatic temporality, where the past and future are understood as ontologically positive forms absence, focusing particularly on a non-representational account of the past where the relation between past and present is one of coexistence rather than succession. I do this by building on Barad's interpretation of the Quantum Eraser Experiment, as well as an analysis of a novel biophysical theory of

argument is that while physical economic approach is beneficial insofar as it simplifies environmental problems and produces quantifiable targets and metrics that can be easily communicated to different groups, it can be undesirable if it replaces a critique of the social and political basis of environmental change. An adequate response to environmental crisis should not be to improve ecosystem productivity or efficiency but to interrogate the social-political systems which threaten ecosystem integrity in the first place.

Tiger Liu

CRMEP, KINGSTON UNIVERSITY LONDON

Against General Economy: A Critique of Bataillean Politics of Energy

Towards the end of the first volume of the *Accursed Share [La Part maudite]*, Bataille ends his treatise with an enigmatic section on the concept of sovereign sensibility, a notion which at the same time invites philosophical and speculative interpretation, but also serves at the moment where the erratic yet systematic theorist eventually arrives at a politics derived from what is supposedly a political-economic theory of energy. This theory of general economy has since then been relatively ignored and taken up in a mysticist form as a niche, heterodox, and rather simplistic attempt at literally re-energising Marxist political economy. Furthermore, in a very short piece of writing on the nuclear bombing of Hiroshima, the sublime horror invoked by the bomb did not call Bataille into fear but inspired him to speculate upon the possibility of a new planetary politics that nuclear technology could bring: a politics of sovereign sensibility. Yet, Bataille's text was informed by the journalistic report on the survivors' account of the bombing, a report that produced a purely aesthetic account of the nuclear bomb, ignorant of the later discoveries regarding the more horrifying realities of nuclear explosion and its toll on the environment. However, it is this often-overlooked aesthetic understanding of nuclear bombs that underlies the Bataillean formulation of the general economy of excessive expenditure. Therefore, the paper seeks to employ Bataille's writing on Hiroshima as an entryway to problematize and challenge the supposed political efficacy of Bataille's theory that is currently growing in popularity.

Gabriella Daris

CRMEP, KINGSTON UNIVERSITY LONDON

Autonomy and Autopoiesis: Cornelius Castoriadis and Volcanic Dynamics

As a way to elucidate the social-historical world (qua social institution), Castoriadis reconceptualised Varela and Maturana's notion of autopoiesis, deepening its epistemological framework on the grounds of its Greek imaginary schema and its relation to the notion of autonomy. Drawing on the romantic imaginary of nature and building on the dialectic between the regional ontology of nomos and the trans-regional ontology of physis as creative (and radical) emergence, Castoriadis coined the term à-être to refer to a magmatic (as opposed to systematic), trans-regional, and seemingly endless self-created and self-destructive being that is irregularly stratified, spatialised in a non-linear temporality that is open to change and never completed. To comprehend the shift from autonomy to autopoiesis and their conflation, it is imperative to reflect on Castoriadis's notion of the volcanic energy of imagination: his conception of the social-historical and the natural mode of beings as magmas, and his use of volcanic dynamics as a metaphor for thinking about the dynamic processes and practices of social imagining and instituting. I argue that in *The Imaginary Institution of Society* (1975), autonomy appears as energy, revolution as regeneration, reaching beyond its initial rupture autopoietically.

evolution called Assembly Theory, where the influence of memory plays a significant role in descriptions of existing matter.

Clayton Crockett

UNIVERSITY OF CENTRAL ARKANSAS

Entanglements of Energy and Time in Quantum Mechanics with Karen Barad

Time and energy are correlated in quantum mechanics in a way similar to that of position and momentum. That is, according to the famous Heisenberg Uncertainty Principle that Barad shows is really an Indeterminacy Principle we cannot know a particle's momentum and position at the subatomic level. In QM, we cannot precisely specify a particle's energy and temporality within miniscule limits due to this same principle. Energy and time function in queer ways at the quantum level, and this co-relation pervades QM in ways that displace traditional thermodynamics with its understanding of energy as work. In her 2019 book *The Birth of Energy*, Daggett shows how a thermodynamic conception of energy as work is wedded to the Industrial Revolution based on the extraction of fossil fuels combined with a Scottish Protestant theological sensibility that Rowe (2022) calls petro-Christianity. We desperately need ways to think about energy beyond extractivism. Barad reminds us that quantum physics is implicated in war, capitalism, exploitation, and injustice, but we can focus on a quantum view of energy that is less tied to modern extraction and the politics of work that pervades industrial and post-industrial capitalism. This presentation explores some of the theoretical aspects of energy and time with reference to Barad suggesting ways to characterise energy as intrinsic to a quantum system as it dynamically diffracts through (and helps constitute) time.

Terra Schwerin Rowe

UNIVERSITY OF NORTH TEXAS

Transition or Transformation?: Barad and Energy Humanities on Transition Temporalities

Increasingly, an energy transition is expected and even seen as inevitable. A smooth temporality of transition to new or next energy technologies is being planned. While common narratives of energy politics convey hopes of energy transition, several studies of green or renewable energy projects have demonstrated that such projects may very well retain the inequalities, injustices, and unsustainable practices of petro-capitalism by merely swapping energy inputs into unjust energy systems (Rignal 2016; Boyer and Howe 2019, Günel 2019). Where this is the case, transition increasingly functions as a euphemism for the extended life of petro-modernity, resurrected in new forms. This presentation aims to read Barad's philosophy-physics perspectives diffractively, acknowledging points of difference and highlighting convergences. If energy is neither merely a social configuration nor purely natural phenomenon, but material-discursive phenomena, then energy forms and systems convey cultures while culture informs energy imaginaries and the kinds of futures that are seen as possible as well as the paths needed to arrive there. The presentation will employ Barad to rethink the temporality of transition narratives that extend the life of petro-modernity arguing that true transformation in energy cultures will require attending to diverse persisting (not past) energy cultures that have increasingly been minoritised in modernity, rather than temporalities of the new infusing transition discourses.

Panel 3

Chair: Rowan Lear

Lived Imaginaries

11:45–13:15 GMT

Leon Hirt

UNIVERSITY OF CAMBRIDGE & UNIVERSITY OF GENEVA

Is it Time to Clean up our Atmosphere? A Review

The failure of reducing greenhouse gas (GHG) emissions to remain within the 1.5C enshrined in the Paris Agreement and the growing sense of urgency of the climate crisis have enhanced calls to develop and rapidly scale up so-called clean technologies, including carbon dioxide removal (CDR) technologies. With a long history and application in numerous contexts pertaining to energy (e.g., clean environment/air), clean technologies are contentious and beget the question of desirable futures, that is, how we imagine these emerging technologies and the stories we tell about them. Further research is thus warranted particularly on the metaphors that underpin discourses and imaginaries related to clean technologies and which help make sense of the world and shape the way we act in it. Through a literature review drawing on science technology studies, sustainability transition studies, and energy humanities, this paper aims to (1) identify and document past uses of the clean metaphor and how they prompted various actions in order to draw lessons for current debates on technological futures and ongoing energy research; and to (2) illuminate how these past understandings of cleanness resonate today and are contributing to shaping current future sustainable pathways and, fundamentally, technological choices.

Saoirse Amira Anis

A Garden of Hesperides Woven and Unwoven Over Time

Switching between the speculative past, future, and abyss, an unspecified not-quite-human narrator details a Chtulucenic world in which the undervalued of society joins forces with the earth to upend arbitrary hierarchical systems of ownership and entitlement. A garden of Hesperides woven and unwoven over time rejects coloniality and embraces fugitivity, proposing entanglements of human and non-human; physical and metaphysical; space and time.

Jessica Saxby

UNIVERSITÉ PARIS 1 SORBONNE / UNIVERSITY OF LONDON INSTITUTE IN PARIS

Imperial Botany: Extraction, Transfer, Erasure

This presentation looks at imperial botany as a particular mode of engaging with plants; different to both that which precedes it in Europe, and to that which European botanists encountered during colonial expeditions. It may be considered to be founded upon the simultaneous extraction from, and erasure of, what Singh Gill calls earth-worlds. That is, the co-productive relationship between Indigenous and Black worlding, in the form of socio-ecological practice and knowledge, and non-human earth system properties such as soil fertility and mineral deposits. If the transfer of Indigenous botanical knowledge is what enables productive extraction by imperial botany, this presentation also asks what gets lost in the transfer. In the case of renaming under Linnean nomenclature, knowledge about plants is alienated from its contextual web of meaning, in which Indigenous plant names often refer to (and comprise) medicinal, geographical, or otherwise situated knowledge of the plant and its place in local earth-worlds. This example frames imperial botany and Indigenous plant knowledges as superimposed worlds, implying that the extraction of knowledge by imperial botany liberates it for productive use, while also necessarily breaking up the structures of Indigenous worlds, both their physical environment and their web of meaning and world-making.

Panel 4

Chair: Natasha Lushetich

Electrics & Magnetics

11:45–13:15 GMT

Ingrid Koenig

EMILY CARR UNIVERSITY OF ART + DESIGN

Wandering the Magnetosphere

This presentation recounts an exploration, starting with interactions above a magnetic field in a physics lab, to wandering the magnetosphere through glacial and lava fields. In a particle accelerator lab, during an interdisciplinary creative research project called Leaning Out of Windows, while probing how scientists speak about the relationships between fields of energies, it became clear to me that physicists considered the interactions between particles, forces, and energies as forms of conversation. My talk builds on this idea, and briefly shows examples of field work, analogue drawing applied to cartography, and speculative cosmology, to explore how diverse energy exchanges can be considered as language. In turn my drawings visualise the dynamic grammars that emerge among natural phenomena, material artifacts, and social forces, aimed to examine systems through each other. They function as a visual essay – Wandering the Magnetosphere – and carry viewpoints from multiple perspectives including bio/geo/chemical reactions, local and planetary interfaces, feedback loops, entanglements of life forms, with micro/macro details, sensing, metaphors, and material-based storytelling to map (often unseen) relations between matter/energy, and with human-caused impacts across phenomena.

Justus Schäfer

Participatory Alter-Automation as Means for Political- libidinal De-Proletarianisation

The paper addresses the relationality of an intensively valued energetics and the political-libidinal literacy of citizens. Acknowledging the increasing degree of automation and an entailing general proletarianisation (deprivation of knowledges of work, life, cognition, and libidinal investment) (Stiegler 2018; Wark 2019), the question of energy as a balance between the reciprocal forces of consumption and investment becomes pivotal to addressing the mereological misery that perfoliates present day politics. Emergent from this high degree of automation we find a proliferating reactive subjectivity incapable of problematising the coming together of the individual and the collective. Alienated from both the political act of negotiation and the production of desire, the citizen lacks encounters of energy problems as fundamental political problems in their sensible environments. Questioning the use value of currently concretised infrastructures (e.g. electricity network), allows the fabulation of trans-individuating (hence political) potentials of de-monopolised maintenance and collective organisation of the built environment. Participatory spatial production, critical re-pair and immediate material engagement can be reassessed as didactic processes of de-proletarianisation that, in a negation of the ultra-liberal myth of supreme efficiency, reintroduces alternative valuations of energy by alter-automation of our techno-political milieu.

Duncan Robertson

UNIARTS HELSINKI

Helen Electricity Worries about her Impending Doom

The character of Helen is one that popped up early on in the Live Art and Performance Studies (LAPS) programme at Uniarts Helsinki. Helen emerged as a response to a prompt from Nauha, the professor on the LAPS programme. The prompt included Oliveros and deep listening exercises that I chose to incorporate into a short 'meeting' with Helen. Helen Electricity, to give her full title, is Finnish electricity with a voice. Rather confusingly she

Giovanni Frigo, Roman Meinhold, Daniel Wuebben

KARLSRUHE INSTITUTE OF TECHNOLOGY / MAHIDOL UNIVERSITY / UNIVERSIDAD PONTIFICIA COMILLAS

Radical Environmentalism and Energy Justice: Emerging Tensions in Energy Transitions

This paper addresses the topic of Radical Environmentalism (RE) in the specific context of energy projects and in relation to Energy Justice (EnJ) frameworks. Energy systems manifest extremely visible projects, infrastructures, and processes that allow for activists interested in RE to become more readily engaged and make their demands visible. We highlight three domains/groups of tensions that either derive from or are strongly related to RE. First, rhetorical tensions or the strained relationship between different terms and definitions. We show that different stakeholders tend to use specific linguistic expressions to describe certain actions and phenomena as 'eco-defence', 'civil disobedience', 'ecotage', 'eco-terrorism', or 'environmental terrorism' and civil disobedience (among others), depending on their interests, perspectives, and competing agendas. Second, there are socio-political tensions that involve different stakeholders (e.g. local communities, non-local activists, media, property and facility owners or representatives, law enforcement, legal representatives, local and national governments) and take place in specific spatio-temporal contexts, but also on social media. Third, there are several normativity tensions related to RE. Given the existence of different EnJ frameworks, which one can better address issues of RE in the energy domain (or regarding energy issues)? We propose that a broader energy ethics conceptual framework is better suited to capture the neglected narratives of RE and can provide a nuanced understanding of their motives and goals.

has quite a posh English accent. The character came into my head when I first moved to Finland. Helen is now an improvised audio intervention. It features sound recordings used as dramaturgical instigators of action (heating, plumbing and electrical noise and interference). This intervention does not include my physical presence, merely my voice coming through the speakers.

Panel 5

Chair: **Dominic Smith****Computing Energy in Materio****14:00-15:30 GMT****Sha Xin Wei**

ARIZONA STATE UNIVERSITY

Metabolism as Material-Energetic Computation?

The Turing-model of computation (or equivalently, Church's lambda-calculus) is a purely formal concept. And for some 80 years, electronic machines materially realising Turing-equivalent computation have been architected to maintain the immaterial illusions of Turing computation: (1) replacing ontology by tokens, in particular binary data; (2) the immateriality and omni-temporality of representation; (3) the conceit that computation takes no physical energy and no space. On the other hand, the metabolic is conditioned though not determined by thermodynamic energetics, friction, analogue continuity, and complexity, with the extra features of mortality, natality, dense metastability, anti-entropy (negentropy), indeterminacy and non-prestatability. Is there any way to associate these seemingly antipodal families of notions? Rather than reduce the metabolic to the computable (as done by machine pattern classification and synthesis, computer games, a-life, assembly theory), I speculate what alternative concept of computation might enjoy some of the features or effects of the metabolic. And following a pragmatic approach I propose some performative experiments towards a metabolic understanding of dynamics.

Oswaldo Emiddio Vasquez Hadjilyra**Negation, Fluidics and Materialist Logics**

As the ongoing return to matter trickles down into reinvented glossaries and research methodologies motivated by new materialist thinking, it remains unclear how it challenges our understanding of computation. Even within a resurging field like fluidic computation

Panel 6

Chair: **Undine Sellbach****Libidinal Pulsations****14:00-15:30 GMT****Iljoon Park**

WONKWANG UNIVERSITY

Energetic De-Composition: Ontic Extendibility

Any form of being is a hybrid assemblage of living and non-living. Indeed, being has an ontic extendibility to extend agency over other forms of being via its connecting and networking capabilities. Thus, a being exists in a form of actor-network, for example, of humans and machines. However, one should not forget that the cyborg extendibility comes from the symborg capabilities in Sheldrake's terms which does not refer to an individual agency but to sympoietic agential networks of scavenger loop in which life is decomposed via its death, and it becomes an ontic contribution to the others.

Julia Pond

KINGSTON UNIVERSITY

Dancing a New Energetic Direction for Capital

This performative paper explores how the economic-energetic field might be re-imagined through practices and conditions of the dancing body. The constituting directionality of value under neoliberal capitalism is towards ever-higher rates of productivity (Postone 1993: 310), a flow which has been central to organising labour, and social relations, for the last few hundred years. Value, created through exchange, is the result of relational movement (Marx, Harvey, Graeber, Pitts), reflecting a particular organisation of the field of human and conceptual energy, a felt-sense of reality, which we might call somatic capitalism. Transformation of the economic energetics of capital through dance is possible through

there is little, if any, theoretical engagement with the material affordances of fluids as a mode of computation. Developed at first to model post-war national economies (MONIAC) while anticipating the Cold War hysteria as it could operate in an ionized environment, fluidic computation could carry out computations dynamically by solving multiple differential equations simultaneously. In more recent years, scaled down to microfluidics, its operations have been reintroduced in the health sector in lab-on-a-chip (LOC) research. In this presentation I would like to approach fluidic computation from a theoretical standpoint by re-interpreting some of its key components, and focus on its materially constituted logic, whereby negation is not the result of a posited non-being (NOT) but the outcome of turbulence disturbance. To do so, I will examine Serres's *The Birth of Physics*, in which he notes that when a laminar flow of atoms is disturbed by turbulence is what leads to existence. But such turbulence, in fluidic engineering, is what defines the NOT operator. From this study case I will conclude by further complexifying the notion of negation through Virno's linguistic anthropology.

Ramón del Buey Cañas and Violeta Garrido

UNIVERSIDAD AUTÓNOMA DE MADRID & UNIVERSIDAD DE GRANADA SÁNCHEZ

Ecological Economics and Technological Solutionism

It is well known that thinking in depth about the ecological problems of our time means the understanding of the origin and nature of our ways of living and, moreover, seeing that these are coupled to a type of metabolism that is resulting in a severe erosion of the web of life and an accelerated waste of our material and energy resources. In this respect, an integrated project of ecological economy and viable technologies need to address the dynamics of energy and material exchanges that are established at its base. And for this, a solid knowledge of the functioning of these energetic and material dynamics at a fundamental level seems unavoidable. This talk will point out how the concept of exergy (Valero & Valero) can be useful in this regard and will articulate a critique of technological solutionism from the metabolic analysis of the capitalist mode of production.

Andres Saenz de Sicilia

NORTHEASTERN UNIVERSITY LONDON

Metabolism and Capitalist Social Form

A crucial moment in the development of Marx's materialism was his deployment of the concept of metabolism to theorise the human relationship with nature. The metabolic framework situates human social activity within an energetic rather than conceptual economy, marking a decisive break with idealism. Yet for Marx social life remains unintelligible as a merely energetic transfer, for that transfer always takes place in historically specific forms, bound to historically specific social relations, institutions, technologies, identities, ideologies, etc. The critical force of Marx's account of Capital lies precisely in the analysis of the social forms that mediate the human-nature metabolism in the modern epoch. This paper examines this link, between metabolism and capitalist social form in Marx's thought, in order to clarify the stakes of the present ecological crisis.

bodily and linguistic poesis. An element that brings forth reality, poesis is an honouring of relation and creative unfolding (Weber 2015); it is also a path to a new common ground of understanding and is not exchangeable (Berardi 2012). From this perspective, I propose to develop Weber's notion of the commons of reality, the energetic experience of entangled co-creation of the world. This immaterial resource of aliveness, available to all, owned by none, allows for consumption but crucially demands a new directionality for value by removing the possibility of accumulation. The presentation weaves together academic and poetic writing and video. Language and images hide, reveal, and highlight each other, evoking a sense of simultaneity and experiential entanglement.

Ashley Woodward

UNIVERSITY OF DUNDEE

Libidinal Energetic Aesthetics

This paper performs an anamnesis of Lyotard's all-but-forgotten libidinal energetic aesthetics, developed in a series of writings in the early to middle nineteen-seventies. Lyotard is one of the few (alluded to in the Call For Papers) who have contested the use orientation of energy, drawing on (but also contesting) Bataille's work, especially through the lens of art. Lyotard is a curious case in that he was himself partly responsible for the suppression of this work: in later writings around technology and politics, he came to exclusively identify the metaphysics of energy with Heidegger's critique of its manifestation in Ge-Stell, and correspondingly rejected his own earlier work. However, this critique ignored or forgot many aspects of his own earlier libidinal energetic philosophy which clearly escapes the Heideggerian analysis, in particular the avoidance of teleology. For Lyotard, any artwork can be understood as a transformer of libidinal energy, and any transformative effect can be considered legitimate and valuable (which takes aesthetics away from any teleology). Passivity rather than the active imposition of ends is necessary for channelling, libidinal energy, which has its source in the unconscious. Art can release energetic intensities with the effect of unpredictably transforming bodies, systems, and social institutions.

Sascia Pellegrini

Marking the Body: Routing of the Senses in Contemporary Society

In this presentation, I will introduce my experimental method of 'sense amplification', designed to create conditions in which sensory inputs are enhanced and elongated in time. I will focus on an experiment I call 'soundography.' Soundography maps space through sound. Assessing the findings of the experiment, I will address the relationship of the human body, and daily routines, to the urban fabric of contemporary society. I maintain that pathways of acting, thinking, and behaving have been imposed from without through reiteration designed to diminishing sensory experience – a process of marking the body through regulating sensuous experiences aimed at the denial of the individual. I argue that the inception of the marked body results from processes of de-individualization and virtual synchronization of consciousnesses in hyperconsumeristic societies: a procedure of persistent erasure of individual mnemo-symbolism, ingested with synchronic memory-marking operations and techniques that temporalize consciousness and commodify everyday life. Lastly, I will address the struggle of the body to adapt to economic forces whose temporal and spatial design is engineered from without, and suggest alternative pathways, and modalities of escape from this contemporary condition.

Panel 7

Chair: Rowan Lear

(In)organic Frequencies

15:30–17:00 GMT

Léa Dreyer

UNIVERSITÉ PARIS 1 PANTHÉON-SORBONNE

Tacit Energetic Knowledges in Lars Fredrikson's Sound Art

Fredrikson (1926–1997) was a Swedish artist who, from the 1960s, developed an early electronic practice that led him to create sound installations. Physical and 'implicit' manifestations of energy are at the core of his approach to visual and sonic arts (Ernst 2016). His work relies on the transduction and manipulation of a broad energetic spectrum, from the electromagnetic spectrum (alpha waves, gamma rays, radio waves, visible light) to mechanical vibrations. Fredrikson also explored the vital and chronobiologic functions of the body, such as breathing and heartbeats. With this paper, I aim to show how he integrated the most recent scientific questions about energy in his practice. I will explore how Fredrikson's work evolved from the 'cosmic metaphor' to cybernetic analogies and systems (Nisbet 2014), and 'situated practices' of sound art (Ouzounian 2008). I will rely on methods provided by media archaeology, the environmental media turn of media studies, sound and energy studies (Kahn 2019). Through case studies of 'physicality' manifestations within Fredrikson's work and those of other composers, sound artists, and visual artists, I will hypothesise an implicit energetic approach on three distinct yet complementary levels: the affective power of sound; its use as a metaphor or exemplification; and an electro-analogue transductive level, which provides a model for understanding the implicit and isomorphic equivalences between different states of energy at play in Fredrikson's sound art.

Josephine Ellis

BERN ACADEMY OF THE ARTS, UNIVERSITY OF BERN

Too Good to Be Food? On Our (Art's) Being Edible

What does art and its conservation have to do with the food chain? How does thinking our being edible implicate art's being edible by bacteria, fungi, insects, and other heritage eaters whether intended by the artist or not? Drawing on Plumwood's eco-feminist critique of the food chain, further still, the food chain as a site of contestation with the human, this paper situates the philosophies and epistemologies of art conservation at the interstices of natural and cultural worlds. By probing, on the one hand, the material legacy of the neo-avant-garde, and on the other, conservations lexicons, particularly its metaphors and analogies closely tied to ideals of the bounded human body, I speculate on alternate possibilities of what it might mean for an artwork to live or die a perverse and nevertheless still a kind of conservation, where continuity might be ecologically imagined through the transfer of energy. Spoerri's *tableau-pièges*, first realised in 1959, often comprising the leftover remnants of chance-derived, food-based situations half-eaten loaves of bread, fishbones, dirty plates and cutlery, stained napkins, cigarette butts and the like fastened by glue to their found surfaces, will be grappled with in particular.

Breck Furnas

UNIVERSITY OF CALIFORNIA, SAN DIEGO

Lapland as a Lab: Aesthetic Models for Mineral Mining

The Global North's increasing calls for energy and tech manufacturing independence appropriates under-examined aesthetic models to legitimise new rare earth mineral extraction projects. My paper examines the sophisticated artistic interventions being supported by state-owned apparatuses in the Lapland region of Europe to facilitate large-scale mining projects, win public support, and strategically narrativize unfolding impacts

Panel 8

Chair: Joel White

The Embers of Fogo

15:30–17:00 GMT

Kuai Shen

UNIVERSITY OF LISBON

The spectral signatures of fire

The energy of fire is unruly. Unbound, fires spread with steady frequency becoming feral, engulfing and consuming life to regenerate multispecies affordances. Wildfire energies multiply into a multiverse of unforeseeable patterns, inducing negative and positive changes on lands in every social, cultural, and ecological dimension. Through the aid of remote sensing, space-borne technologies aid in monitoring the spectrum of energies on a planet on fire. The wavelength of fire radiation, beyond 750 nanometers, can be measured using satellite data. By these means, however, spectral energies are systematically categorised while situated ways of being with fire are ignored. The spectral signatures of fire should be revalidated through combined onto-epistemologies of seeing and being that weave together critical remote sensing, human-animal relations, and indigenous epistemologies.

Verónica Policarpo

UNIVERSITY OF LISBON

Following the energy of fire: media affective landscapes

Departing from how media report and construct the situation of animals in disasters, I speculate about how in these narratives the energy of fire is reverberated, producing an affective background for disasters. I discuss three different tropes: emergency and rescue; death, loss and victims; and post-fire support. I hypothesize that these constitute affective building blocks in media discourses about disasters. Through visual (e.g. images of fire) and verbal (e.g. specific terms) language, media produce specific affective atmospheres that make use of, and reproduce, the energy of fire, with important consequences to the production of public opinion and public policy.

José Luís Zêzere

UNIVERSITY OF LISBON

Fires of tomorrow: navigating the climate challenge

This presentation begins by examining fundamental principles of wildfire behaviour, such as the fire triangle and the rule of three 30s, to underscore the significance of temporal scale in modelling wildfire hazard, defined as the probability of wildfire occurrence. Wildfire hazard assessment for Portugal is analysed across three temporal scales: decennial, annual, and centennial. The methods and assumptions behind these assessments are presented, with a focus on how the different timescales generate varying outcomes. A clear understanding of these differences is essential to ensure accurate interpretation and application by stakeholders and decision-makers in risk management processes.

to humans and nonhumans. The role of aesthetic experience to mediate and manage anxieties over environmental devastation demands more attention. More specifically, how can visual art be leveraged by state actors to simultaneously erase and write narratives around new energy and technology independence movements? This project includes a paper that examines how these emergent models of mining also operate as aesthetic models for scripting distributed agency.

Barbara Larson

UNIVERSITY OF WEST FLORIDA

Art as Effusive Energy: Herbert Spencer and Gerard Baldwin Brown

Polymath Spencer was one of the most influential thinkers in Great Britain in the second half of the 19th century. Indeed, his ideas on the tandem evolution of mind and culture had a worldwide reach (Global Spencerism). Baldwin Brown, who was Gordon Watson Chair of Fine Arts at the University of Edinburgh (1880 – 1930), was in part a follower of Spencer. Spencer addressed his ideas specifically on art and aesthetics in the chapter ‘Corollaries’ in the second edition of his *Principles of Psychology* (1872). Spencer maintained that art was a product of neurological urges – effervescence – that had once been directed towards survival in evolutionary history. Thus, the idea of art for art’s sake was a valid one since art was not necessary to life and served no real purpose in and of itself beyond satisfying nervous energy in alignment with aesthetic responses embedded in human physiology. Baldwin Brown agreed with the concept of neurological energies that found an outlet in art, and he also embraced Spencer’s ideas on the tandem evolution of mind and body, along with Spencer’s idea that art came about through social stimulation. This paper examines how Baldwin Brown traced a history of art from prehistoric naturalistic images based in mimicry through medieval mural painting based in pageantry in Florence through his conviction that surplus energy and celebrated communal ideals can account for art forms and expressive tendencies.

Keynote Speaker

Chair: **Natasha Lushetich**

Karen Barad

17:30-19:00 GMT

Energetics of the Otherwise – Material Wanderings/Wonderings

Karen Barad is Distinguished Professor of History of Consciousness at the University of California at Santa Cruz, with affiliations in Philosophy and Critical Race & Ethnic Studies. Barad’s Ph.D. is in theoretical particle physics and quantum field theory. They held a tenured appointment in a physics department before moving into more interdisciplinary spaces. Barad is the author of *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press, 2007) and numerous articles in the fields of physics, philosophy, science studies, materialisms and nuclear colonialisms. Barad’s research has been supported by the National Science Foundation, the Ford Foundation, the Irvine Foundation, the Mellon Foundation, and the National Endowment for the Humanities. They are a founding member of the Science & Justice Research Center, the recipient of an honorary doctorate from Gothenburg University, and faculty at the European Graduate School.

Panel 9

Chair: **Natasha Lushetich****The Energies Artists Say****9:00–10:30 GMT****Peter Blamey*****Making Sounds while Thinking Energies***

Processes of transduction underpin much contemporary art, from the internal operations of technologies and interactions between materials used in making through to the material or performative manifestations of artworks themselves. Although the term has been readily mobilised in the wider humanities, where usage ranges from the practical to the metaphorical, rarely if ever is transduction unpacked from the position of artistic practice. What, then, might be the factors physical, theoretical, aesthetic or otherwise at play here for artistic practices, especially for those practices whose subject is energies and their transformation? What might experiences of transduction hold for both artists and audiences? As an artist who began in experimental sound but now attends to a range of energetic phenomena, my practice is situated at points of transit between energies (lightning into sound, infrared into visible light, fire into electricity, etc.), realised through performances (as well as recordings, installations and other artworks) that emphasise transductive processes. Using examples drawn from my own practice, which might be described as making sounds while thinking energies, this talk begins to sketch out a poetics of energies performance.

Pia van Gelder

SCHOOL OF ART & DESIGN, AUSTRALIAN NATIONAL UNIVERSITY

The multivalent energies artists say: a method for analysis

Wild Energy (2014) by the experimental composer Lockwood (b. 1939) is a sound installation in collaboration with sound engineer Bielecki. The composition is made from an arrangement of ten individual sources of energies recorded by scientists and researchers, from those that occur below sea level, to those that can be found beneath the sun's convection layer. The geophysical, biophysical and magnetospheric recordings are sped up or slowed down to bring them into human hearing range. O'Brien, Kahn, and I began examining how Lockwood understood energy in this and a few related works and found that instead of an assumed predominance of sound and listening, Lockwood had been working with sound as an energy since at least 1971, as she put it in a letter to fellow composer Oliveros. Lockwood discussed trying to know energies, sensing all the interdependence and interactivity, sound being a practical means to convey this broader exploration. This paper will discuss energies in the work of Lockwood, and our historiographic process.

Douglas Kahn

SYDNEY COLLEGE OF THE ARTS, UNIVERSITY OF SYDNEY & UNIVERSITY OF CALIFORNIA AT DAVIS AND UNIVERSITY OF NEW SOUTH WALES

Energy humanities is more than energy resources

The academic field of energy humanities was constituted through the effective equation of energy with sources and systems of fuel and power generation. It would have been more accurately called energy resource humanities. Dominance of this sense did not gain traction in the United States until the long-1970s with the Santa Barbara oil spill, sharp rise of the environmental movement, Three Mile Island, and especially the OPEC oil embargo, the so-called energy crisis. When artists, like everyone else, said energy before, during and since that period, they meant and mean many things, i.e., energies, often simultaneously. In the face of complexly configured usage, a priori approaches of whatever concept of energy constrain historical and cultural analysis where multivalences of energies are at work. The

Panel 10

Chair: **Dominic Smith****Measurement & Media****9:00–10:30 GMT****Stavros Kousoulas**

TU DELFT

For the Making of Gods

In the last sentences of *The Two Sources of Morality and Religion*, Bergson asks a pressing question: human beings must determine whether they want to go on living or not, and if they do, then make the extra effort to fulfil the essential function of the universe, which is a machine for the making of gods. In this paper, I will take Bergson's claim literally. However, to understand the cosmos as a god-making machine, one needs to complement energetics, especially in their mechanistic postulates. To do so I will focus on philosopher Ruyer. In examining Ruyer's axiological revolution, where energy and information are neither confused nor isolated, we can not only sense how thoughts and intentions can have an actual physical effect without violating thermodynamics. Crucially, we can sense how our informational and negentropic god-making, contrary to what one would expect, facilitates the cosmological entropic satisfaction of the very same laws that it denies; and we do indeed need to sense that before we respond affirmatively to Bergson's question: not only do we want to go on living, we stubbornly want to make the extra effort.

Gilles Massot

LASALLE COLLEGE OF THE ARTS & NANYANG TECHNOLOGICAL UNIVERSITY

This is Not a Paper.

In 1935, Benjamin's seminal essay raised the question of what would happen to the aura of the work of art in the age of mechanical reproduction. The recent developments and controversies surrounding AI and more specifically AI imaging prove more than ever how visionary that question was. From photography to the phonograph, then cinema to video and all subsequent electronic developments such as electronic banking, today's everyday life is built around the phenomenon of technological memory. I believe the apparition of photography was the first concrete manifestation of a mnemonic energy in the making since the dawn of time, an energy awaiting the development of suitable technologies to start actively act upon and transform the world, just as any form of energy does.

Wolfgang Muench

LASALLE COLLEGE OF THE ARTS | UNIVERSITY OF THE ARTS SINGAPORE

Ephemeral Realities: Signals, Systems, and Processes

In the 1960s, environmental psychologist Boutourline proposed a 'signal-oriented approach' to describing human environments. Boutourline outlined his conceptual approach as a framework to describe the interrelation between human and nonhuman actants in a time-space matrix of signal-based, inter-stimulating events. His framework rejected the Newtonian object reality and defined three-dimensional environments as 'sets of points each with a set of occurrences or events' in a matrix comprising of subsets of unique physical events or signals occurring at that location. Boutourline's signal-oriented framework was informed by the principal ideas of Wiener's theory of cybernetics and resonated with Whitehead's Process Philosophy and Bertalanffy's general system theory. It already points towards a mathematical-logical definition of space in three-dimensional VR environments that rely on complex distributed systems of events and communication. It also became the blueprint for developing an analogue-electronic AV device capable of responding to audience movements. This paper discusses Boutourline's theoretical framework within the context of Whitehead's process philosophy and other relevant theoretical frameworks, revisits the

capaciousness of the arts, being conducive to and practiced in such multivalences, may form a ground for developing more supple and rigorous concepts of energy/energies in the humanities.

relevance of his ideas in understanding the dynamic interplay between individuals and their environments, particularly concerning the human-machine interaction with analogue and early digital media-technology.

Shan (Shan Shan) Wu

HARVARD UNIVERSITY, GRADUATE SCHOOL OF ARTS AND SCIENCES

The Somaesthetic Rule: Alternative Proposal to the Qi-Energy Equivalence

Featuring interdisciplinary perspectives including an interview with contemporary masters that focuses on histories and contemporary iterations of transmitted premodern techniques of bodily motion, the paper will investigate early Imperial Chinese understanding and practice on how energy – beyond qi and/or charisma – specifically motion (both the measurable or imaginary appearance, i.e., path of movement and the causes, i.e., the power/dynamics) was documented, showing that what the latecomers in Chinese hi story either conceived or romanticized systematically as the esoteric martial arts may be approached best as loosely connected sets of experimental gestures derived from the directed experiences of energy spent in speed (an idea that clearly transcended the body-mind dichotomy yet pointing towards a different polarity within the somatic existence of the body, i.e., between the larger scale bodily and gestural structure and the smaller scaled, enigmatic space or inner diastem [jian/jianxi] in between forms), over an interesting period of transition of traditional Confucian ethical values profoundly associated with normative behaviour and social engagement (and disinterested in energy-related topic such as stress reduction) were transformed and, moreover, as the larger frameworks conceals the forking purposes of local/vernacular and standard/official media of measurement.

Panel 11

Chair: **Natasha Lushetich**

Controversies & Combustions

11:00-12:30 GMT

Matthew Pangborn

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Beyond Addiction: Energy and Identity in the American Context

We tend to think of oil as an object and our use of it as mistaken or immoral rational choice, even as an addiction. And yet, addiction cannot capture how dependent we are upon the substance, and how transformational entanglement with fossil fuels has been for modern humans. What if oil was instead of an object something more like Bennett's 'actant'? And what if our engagement with it was not the result of addiction or mistake, but the outcome of a seemingly natural process, one that became inherent to our modern notions of self? Modernity is often told as a story of technological triumph, but might its extractive logic have very different roots? This paper will explore such questions in the context of a discourse that begins with the first encounters of colonial Americans with the new fossil-fuel economy, which imagines the fossil-fuel encounter above all else as the confrontation of the self-strange.

Inna Häkkinen

UNIVERSITY OF HELSINKI

A Universe in an Atom: Nuclear Optimism, Romantic Atom and Imagined Realities Synchronized

The presentation aims to outline the cultural response to radiation/atomic science via

Panel 12

Chair: **Joel White**

Petropolitics & Complexity

11:00-12:30 GMT

Lucas Omer Severen Surjus

FILO-UFU, NÚCLEO DE ESTUDOS EM FILOSOFIA DA ENERGIA & THE NEW CENTRE FOR RESEARCH AND PRACTICE

Perspectivism and Petropolitics: Brazilianisation at the Centre of the Energy Transition

The point of my paper is to venture into the techno-energetic complicities of capitalistic petropolitics, examining Brazil's case as an expression of the current trends in capitalist realism, in which the country appears then as both the vanguard and the laboratory of capitalism. Such is the case because Brazil presents itself as some sort of herald of the energy transition, is also one of the largest oil producers in the world. In that sense, I intend to think capital through the lenses of capital and also energy from its own point of view, quickly articulating a mutual contribution between the notions of perspectivism following Eduardo Viveiros de Castro, Brazilianisation following Arantes and petropolitics following Negarestani. My point in doing so is less understanding how much capitalism's responses to the climate crisis are utterly oxymoronic, how it is made to produce redundancies, which I'll understand as Brazilianisation, but more importantly to make an appeal to fellow philosophers which comes by way of an argument in inhumanism which aims to turn perspectivism and accelerationism onto themselves and produce not the inhuman but some sort of hyper-human.

Bruno Belém

CIRCUITOS DE PESQUISAS CONTEMPORÂNEAS

The Persistence of the Sun: Thermodynamics and Complexity

appealing to imagined realities (Kuhn 1962; Campbell 1988), regarded here within nuclear knowledge management. Such appeal to the microscopic perspective of radioactivity/nuclearity reveals the existence of alternative/imagined reality via the amalgamation of scientific imagination, popular science imagination and literary/cultural imagination, studied here in the context of the rise of atomic scientific research. The presentation intends to introduce *The Atom and Eve* (1966), a movie, directed by Starbecker (1927 – 2008), and *The Girl in the Golden Atom* (a short story in 1919 and a novel in 1922) by Cummings (1887 – 1957), via implementing imagined reality in investigating scientific parameters of an atom. The comparative analysis of implementing such perspective on imagined reality inside an atom in the movie and in the novel, implies via romanticizing the atom and atomic science in visualizing the early Nuclear Anthropocene's rhetoric. This helps distinguish the narrative tools of translating radioactivity/nuclear knowledge to public by applying a microscopic focus on framing love story at the background of scientific experience and scientific activities in discussing the characteristics of romantic science (Hadzigeorgiou, Schulz 2006) through the microscope perspective on the nature of an atom.

Giovanni Frigo, Tetiana Lysokolenko, Olena Gruba

KARLSRUHE INSTITUTE OF TECHNOLOGY

Energy Justice during Warfare: Tensions at the Zaporizhzhia Nuclear Power Plant

Historical evidence suggests that energy can be used as a weapon in the context of warfare. Although this can refer to energy sources, carriers, or infrastructures, this paper focuses on the Zaporizhzhia Nuclear Power Plant (ZNPP), Europe's largest nuclear facility and a contested socio-technical system. Since March 4, 2022 when the ZNPP was taken over by Russian forces, there have been great concerns regarding risks, security, and governance. This paper highlights several ethical issues that have emerged during warfare in the case of ZNPP. Then, it explores how and why the weaponization of energy during warfare has created an array of conceptual and concrete tensions related to energy justice and broader energy ethics. We show that these topics have not been thoroughly explored in EnJ scholarship and contribute to filling this gap.

Studies on complex systems dialogue with thermodynamics on several fronts: interpretations on the explanatory extensibility of the second law of thermodynamics, properties like non-balance and self-organization, adaptive and dissipative processes, control, information, extinction. Since at least the 1940s, speculation about order and disorder has been rescheduled on increasingly larger scales, whether in Schrödinger's physics, Wiener's cybernetics, or Shannon's information theory, among others. From its beginning, however, this mise-en-scène has been permeated by the tension of nearness and distances between the living and the non-living. In the field of so-called humanities, figures like Freud and Bataille pored over the statute of thanatology facing this same tension, dealing with the general economy of energy and its vicissitudes. As these studies advance, we get increasingly closer to speculative cosmology, embarking on a detective car pursuing a psychosphere with a bad taste of aluminium and ash, the bad taste in Boltzmann's mouth, who saw entropy as an irreversible and inevitable tendency of all things toward a final state. Time destroys everything. However, contemporary research on thermodynamics and complexity also seeks to demonstrate the validity of the old insight that destruction is creative and that it is at work everywhere, making it with death.

Gabriel Prado Rodrigues

RIO DE JANEIRO STATE UNIVERSITY & CALIFORNIA INSTITUTE OF THE ARTS

The Sign and the Flow: Ontology of Capitalism According to Baudrillard, Deleuze and Guattari

This research aims to discuss what we can call a general ontology of capitalism based on the intersection of two conceptual paradigms, at first opposed: that of symbolic exchanges, by Baudrillard; and that of the ontology of flows, by Deleuze & Guattari. As a sociologist influenced by Marxism and critical theory, Baudrillard will postulate a theoretical priority of semiolinguistics, just as a socio-economic priority of symbolic exchange. In this context, for Baudrillard, the historical development of capitalism culminates in a world of simulacra, in which signs lose all referentiality apart from other signs, dissolving every meaning and reality itself. In Deleuze and Guattari, by contrast, the most relevant concept for defining capitalism is not the sign or the symbolic exchange, but what the authors call a capitalist axiomatic, which captures pre-signifying social and psychological ontological – flows and conjugates them into an operational circulation mechanism. Our interest is to show how Baudrillard and Deleuze & Guattari, respectively, converge in their conception of a capitalism that is based on a formal and operational logic, but also horizontal and rhizomatic, a perspective that paradoxically enables the authors to conceive of a breach in an increasingly totalizing and immanent system.

Marcos Henrique Godoi Gonzalez

IERI-UFU, NÚCLEO DE ESTUDOS EM FILOSOFIA DA ENERGIA

Sustainability and Complexity: Entanglement and distributional agency as a way to constrain entropy

Although greenhouse gas emissions constitute a severe problem, looking at sustainability as a unidimensional issue is an awful approach. As Rockstrom shows in his seminal work, the planetary frontiers have multiple dimensions. In this seminar, we try to connect the issues of sustainability and complexity to show that a society cannot be sustainable without being complex, a lesson learned from how ecosystems organize themselves. For that, we will bring the contributions of GeorgescuRoegen, Schrodinger, Prigogine, Stengers, Koestler, and Rosen to understand complex systems that present entanglement and distributional agency as essential characteristics. The multiple perspectives that are inherent to different beings entangled in the same ecosystem is what allow them to perceive what is high-entropy waste for one organism as low-entropy resources that are vital to its existence, and it is the distributional agency that comes from such different perspectives that are key to entangling society in nature again.

Panel 13

Chair: **Dominic Smith****Elemental Energies****13:15–14:45 GMT****Marie Lecuyer, Nicolas Cadieux & David Jaclin**

UNIVERSITY OF OTTAWA – HUMANIMALAB

River Energies: Moving water worlds around the Ottawa River

Last summer, researchers from the University of Ottawa walked off the campus and into its watery surroundings for a river course. Following a speculative drop of water from the Kitchissippi (the Anishinaabe denomination for the Ottawa River), we fieldworked in, on and around water for an experience in elemental anthropology. Drifting, floating, diving, we engaged with various circulations sustained by the river flow and its energies, at times geo-chemical, at times eco-cosmological, always anthropogenic. From Asinabka sacred island to Chaudière falls, through Brookfield Energy's headquarters and Zibis multimillion-dollar riverfront development with its net-zero dream of community living and neighbouring toilet paper factory that heats its buildings during winter we regard this sensitive anthropological confluence as a saturated flow (following Ruiz and Jue (2022)). A flow where water is, disparately and at times concomitantly, viewed as a natural resource to protect or exploit, a desacralized cosmic vein, a discomfoting oracle of upcoming climate events, an undervalued landscape to upgrade, a promise of foreseen capital gain, or a psychogenic manifestation of freedom to reclaim. Along the banks of this ever-changing watercourse, this presentation investigates the pulsating milieu where every envisioned future for Ottawa and its baroque assemblage of people seems to emerge.

Helena Wee

BIRKBECK, UNIVERSITY OF LONDON

Daoist Elemental Form and Movement

At the beginning there was chaos. From this was born yin and yang. Balancing these forces created stable conditions. Interactions between yin and yang produced the five elements: wood, fire, earth, metal and water. Yin and yang are complementary, interconnecting, present in all things, enabling life and creativity through the Dao (Rowe & Sellman 2003). Before differentiating into yin and yang, chaos at the universe's birth was referred to as The Primordial Breath. Qi thus also means cosmic energy (Culham & Lin 2020). The Chinese Five Elements are aspects of Qi. They were a cosmogony produced by Neo-Confucian cosmologist and philosopher Zhou. Qi is air, breath or vital energy, the life force of the cosmos; but also means tool or utensil. Technologies are tools. Following Hui's concept of multiple cosmotechnics (Hui 2016), examining Chinese Five Element balance states helps analyse lifecycles of technologies and their socio-ecological effects. A pattern discloses a moment, and its likely outcomes. Pattern recognition is important in divination. In the Silicon Archipelago elements are imbalanced due to urban data flow's environmental effects. Inspecting the elemental system at varying scales brings different objects into view. Transitory moments are discerned through observing form through pattern. They point to possible fortunes or fates (Feuchtwang 2023). By analysing elemental imbalances, we can determine how ecological damage happened and how to resist it. But first we need to understand elemental form and movement.

Amit Singh

DR. B. R. AMBEDKAR UNIVERSITY DELHI

Myth of the Churning of Ocean: A Cosmic Source of Energy in the Indian Belief System

I propose to investigate the myth of Churning of the Milky Ocean that provided the energy-less devtas, i.e. gods, immortality and energy to fight the powerful asuras, i.e. demons, vis-a-

Panel 14

Chair: **Undine Sellbach****Sedimentary Deposits****13:15–14:45 GMT****Indigo Gray**

UNIVERSITY OF SHEFFIELD

Slime, Flesh and Firedamp in Fiction of the Coal Mine

In his 2016 thesis *Fossil Capital*, Malm describes the fossil economy not as a static building but rather a train put at a point in the past on the current perilous track, arguing that therefore we require knowledge of the switching mechanism to enter a safer course (2016: 16). In other words, to divert our current climate trajectory, we must understand the historical and social contexts that sparked and maintain our reliance on fossil fuels. My paper addresses three fictional portraits of the coalmining industry at its peak: Zola's *Germinal* (1885), Lawrence's *Lady Chatterley's Lover* (1928) and Jone's *Cwmardy* (1939). Coal proliferates through these texts beyond its place in the pit and the hearth: it emerges as slime in the mud and blood of *Germinal*, as flesh and heritage in *Sons and Lovers* and as explosive firedamp (methane) in *Cwmardy*. Each of these materials establishes a different politics of coal, a different relationship between miners, environments, labour and output.

Louisa Iarocci

UNIVERSITY OF WASHINGTON, SEATTLE

Architecture of Coal: Lost Trajectories of Energy

This paper examines the architecture of coal mining as it emerges as a large-scale industry in nineteenth century Anglo America. The idea of progress in western society is fuelled by the use of a substance called black sunlight, transformed over millennia into a plentiful and cheap combustible source of power. The sites of mineral extraction have often been hidden, in remote locations and/or beneath seams of rock. The built works of mining settlements that drove industrial progress were transient but left irrevocable marks on the environment. I seek to reconstruct the architectures of mining through the physical structures and forms that supported the movement of the mineral as it was removed, processed, and transported and in the bodies and stories of the workers and their communities who lived, thrived, and died along its path. These forgotten landscapes of coal from the hoist to the shaft, the pit to the pile, tell the story of an architecture of flows and stops and an energy lost, that reveals the myths of mineral extraction as a civilising force.

Maria E. Karssenber

UNIVERSITY OF GLASGOW

The cultural, material and epistemological transitions of post-coal Scotland

The transition away from coalmining in Scotland shows how a different relation to resources impacts not only the physical environment but the lives of many and society as a whole. Meanwhile it reshapes the labour at the interface between nature and society, the relations between nature, technology, energy and resources and how knowledges of nature, resources and technology get applied I aim to uncover how these dynamics play out in specific locations of coalmine closures, how dynamics between politics, local communities, landscape and resources are connected in a time of transition, how society and its physical landscapes are intertwined in many ways and how the future for these nature-culture interactions could look like. To understand the processes of energy transition in Scotland requires an understanding of the historical generation and application of (geological) knowledge, and the changes in the generation, application and social role of this knowledge. I will discuss an approach to studying the mechanisms of energy transition that connect to knowledge generation, knowledge application, labour and the material world, and the

vis its significance in the making and sustenance of a pilgrimage tradition known as Kumbh Mela. This pilgrimage-fair at Prayag, a city in the Indo-Gangetic Plain in the Northern regions of India, is about 45 days long religious event in which common pilgrims take holy dips at the confluence of three sacred rivers. Millions of people gather here, without any advertisement or invitation, to attain salvation and pay symbolic debts to their ancestors. This sacred space validates common beliefs through mythical narratives enshrined in the scriptures as well as folk practices. Kumbh Mela comprises many narratives that are part of the folk belief system of the region, especially the benefits of bathing in the holy confluence. I propose to investigate the concept of amrit, one of the gifts received from the churning of the mythical ocean that provided the required energy and force to the gods, as well as its significance for the pilgrims vis-à-vis sacrality, supernatural forces and energies, and ultimate boons for the worldly and other-worldly lives.

Désirée Coral

UNIVERSITY OF DUNDEE

Eating the Ancestors: Clay, Reciprocity and Energy of the Andes

Eating the Ancestors is a multilayer and multitemporal art installation presented at the Centre for Contemporary Arts, Glasgow in 2022. It consists of several elements, such as red ceramic phytomorphed vessels inspired and/or replicated from pre-Columbian designs of domesticated crops in the Americas, compost, and germinated seeds in the process of growing. Our ancestors and plants have collaborated for centuries with other ecological beings and ecosystem elements to perpetuate food security for future generations of humans and nonhumans and to secure their own plant existence. *Eating the Ancestors* is a practice-based research investigation that explores the notions of reciprocity, using the lens of clay as a guide for learning about the energy and synergies of life.

process of finding interdisciplinary approaches to study energy transitions, connecting its epistemologies, ethics and practices.

Maja Rup

UNIVERSITY OF WARSAW

Ethical (Im)purity and Renewable Energy Sources: Baltic Sea Naturocultures

Regardless of the (non-)recognition of the Anthropocene as a geological epoch, we are living in a time of crisis on a planetary scale. The earth is in danger of being precipitated from the conditions under which life was able to arise and develop during the Holocene epoch. One of the reasons for the current situation is human interference on the geological scale. By burning fossil fuels, we have warmed the Earth's climate. Still, as humans, we remain dependent on energy – we need it to sustain life and to function. With the need for the energy transition, renewable energy sources (RES) are becoming increasingly popular. They are referred to as “clean” and “green” energy sources, but this does not mean that they are free of negative environmental impacts. Using Alexis Shotwell's category of constitutive ethical (im)purity, I attempt to trace the environmental impact of RES and consider to what extent RES are a more ethical source of energy. How do renewable energy sources affect perceptions of the environment and local naturocultures? Do they enable coexistence with other non-human life forms? Or do they exacerbate inequalities and hierarchies, including within the human global community? Is there an element of concern for non-human entities, such as plants, animals or ecosystems, in the project of obtaining energy from so-called inexhaustible sources (such as the sun or wind)? What conditions must be met to consider RES as a more ethical energy source?

Panel 15

Chair: **Natasha Lushetich**

Momentum & Information

16:00–17:30 GMT

Cécile Malaspina

KING'S COLLEGE LONDON, COLLÈGE INTERNATIONAL DE PHILOSOPHIE, PARIS & NEW CENTRE FOR RESEARCH AND PRACTICE

Potentials, forces that carve out their path: Simondon's concept of ground

The climate crisis and its interrelation with sociopolitical and economic crises, require that we re-examine our approach to systemic complexity. The notion of ground, as conceived by Simondon, will draw our attention to what remains perpetually marginal with respect to structural analysis, namely the energetic role played by ground. Simondon describes the relation of form and ground as a bridging of the present that diffuses an influence of the future onto the present, of the virtual onto the actual (Simondon, *On the Mode of Existence of Technical Objects*, 61). Clarifying the topo-chronological future anterior of this relation, what emerges is the constitutive role of ground, of its inherent dynamisms, potentials and singularities one that is very different from the neutral, disembodied background of simulations and modellisations of modern science (Longo, *Le cauchemar de prométhée*, 2023). Simondon enables us to think of the forms we discern, analyse and classify not only as emerging from ground, but as the very unfolding of a ground that is complex in its dynamic, rich in singularities and replete with potentials, forces that carve out their path (Simondon, 61).

Panel 16

Chair: **Rowan Lear**

Wild Energies

16:00–17:30 GMT

Praba Pilar

CALIFORNIA COLLEGE OF THE ARTS

The Parallel Worlds of Queercornu(c/t)opia

How might frameworks of knowing function as propulsion in the mattering of mind, bodies, politics and technologies (Bennett 2010, Ferreira da Silva 2016)? How can non-modern indigenous ways of knowing inform, disrupt, encompass or exceed modern schema and constructs (Cadena 2015, Donald 2009)? What happens when we commute the wisdom of alchemy, the transformation of fermentation and collaborations between human, culture and natures systems as a means to generate world views of equity and earthly inclusion? Columbian artist Praba Pilar will pose these questions with her project Nixtamalizaté-té-té, a collaboration with LLMs, AI companions, and AI generators on methods, procedures, coding, lyrics, songs, and letters that grow technologies of life. In her presentation, Pilar will discuss how she renders nixtamalization, a Meso-American technology developed thousands of years ago to increase the nutritional value of corn and sustain life, as a technology of life, contemporaneously. She will address how nixtamalization is a human-culture-more-than-human collaboration that encompasses time, collectivity and emulsion, and can be animated to reimagine technological futurity. She will also expand on her drawing from maize is the basis of cosmovisions in the Americas, which she combines with nixtamalization to create technical collaborative process that reveal possibilities and limitations in a technological pluriverse. Finally, she will demonstrate how Nixtamalizaté-té-té, a technical synergy of

Sha Xin Wei

ARIZONA STATE UNIVERSITY

The stress-energy-momentum tensor as an ontogenetic operator

For Simondon, information is never relative to a single and homogeneous reality but to two orders in a state of disparation & never deposited in a [given] form but is the tension between two disparate reals. The elastic dynamics of his material example, clay, is modelled by what material scientists call the stress-energy tensor. I consider this tensor and its general relativistic analogue: the stress-energy-momentum tensor not to reduce phenomena to physics, but to see what insights we may derive from such non-Newtonian figures of thought, for a materialist, haptic, textural (distributed), approach to how emergent energetic directionalities and/or networks structure human and nonhuman trajectories, behaviour, and affordances. I propose to re-earth discussions of energy from dematerializing, transcendental versions of informatics and cybernetics, and orient towards a metabolic understanding of dynamics.

Muindi Fanuel Muindi

FYRTHYR INSTITUTE FOR UNSETTLING TECHNOLOGIES

Magics, Metaphysics, Energetics

Since its inception, the science of energy, or energetics, has informed the research of occultists and philosophers, serving as a guiding model for the creation of new concepts of the uncanny, the other-worldly, the ontological, and the ethical. Magical and metaphysical thinking have, in turn, informed the science of energetics, serving as forerunners, presaging unexpected findings and paradigm shifts. This presentation investigates the energetic tropes that permeate the varied discourses that characterize magics and metaphysics and, in turn, the forms of magical and metaphysical thinking that permeate the scientific discourse of energetics. To this end, it will engage with five forms of energetic agency and energetic agents: conduction and the conductors that channel energy; transduction and the transducers that transform energy; resistance and the resistors that dissipate energy; capacitance and the capacitors that intervene between conductors to store-up energy; and lastly, inductance and the inductors that convene (or coil) conductors around them to store-up energy. One particular family of energetic devices will serve as informative anecdote for this investigation: analogue radios and their tuned circuits – consisting of a resistor (R), an inductor (L), and a capacitor (C) configured to form a harmonic oscillator. Following this line of inquiry, the presentation will consider the manner in which Colonial Science tacitly accepts metaphors drawn from the magical and metaphysical languages of the West and rejects metaphors drawn from the magical and metaphysical languages of the Rest.

Alicia Juarrero

UNIVERSITY OF MIAMI & VECTORANALYTICA, INC

A relational ontology grounded on constraint

This panel has challenged itself to consider the possibility of a new logic, one that shifts from a focus on things to a focus on systemic complexity. In particular, it aims to do so by “reappraising the relation between form and energy.” We take our inspiration from the Simondon’s concept of ground: not as forms but as “that which carries forms.” Not coincidentally, the notion of ground carries with it a different understanding of temporality than that of (Newtonian, efficient) cause and effect.” This paper takes up that challenge by proposing a relational ontology grounded on the operation of constraints in complex adaptive systems. Constraints exert influence not as efficient cause; they do so by sculpting, shaping and modulating/regulating possibility vectors within a constrained-generated field. One type of constraint (context-independent constraints) establishes the field’s persistent and ongoing generative potential by laying out its fundamental ontological ground the field’s

bio-culture-technology compounded in time, allows us to think differently about intelligent systems and cultural schema and break feedback loops that reify hegemonic systems.

Suzanne Thorpe

MANHATTAN UNIVERSITY & NEW YORK UNIVERSITY

Sonic Energies as Environmental Policy

Making sense of sonic energy is a transduction in itself, moving energy from one state to another by way of bio, technical and psycho means. Indeed, we are transmitting and transforming aurally, somatically and interoceptively within a sonosphere, communicating matters and realizing mattering within a field of energy forces that resonate among and within us, on earth and in the ether. In this presentation I will discuss sonic energies as a conduit to policies of mutual tending through my project *Serenades for Settling*. *Serenades for Settling*, created in collaboration with media artist Stephanie Rothenberg, is a multimedia installation and participatory performance that makes sense of human-marine tensions by listening with the sound sensitivity of oysters. Close to the density of water, a medium that efficiently transmits sound, oysters transduce sound to navigate to healthy habitats. However, anthropogenic noise interferes with these acoustic signals, preventing oysters from settling and reproducing, to the detriment of our marine ecosystem. I will address how the entanglement of participants, listening to healthy oyster habitats within *Serenades for Settling*, and acts of song, cogitate a knowledge of safe marine ecosystems and potentially render sonically informed policies of mutual tending.

Marina Zurkow

NEW YORK UNIVERSITY

The Breath Eaters: feeling fire, wind, and the movement of pollutants

This talk will present *The Breath Eaters*, an animated, custom software artwork that visualizes PM2.5 pollutants produced by wildfire and fossil fuel plant emissions. Inspired by an open-source AI image of a World War II propaganda map and presented as a live, generative composition, the work demonstrates how particulate pollution is carried into the high atmosphere and across the globe on currents of wind. The *Breath Eaters v2.0* broadcasts real-time data from NASA’s fire detection systems, Global Energy Monitor’s global fossil fuel power plant database, and NOAA’s global forecast system. The project was created by Zurkow in collaboration with Schmitz.

Nicola L. Hein

UNIVERSITY OF MUSIC LÜBECK

Improvising Machines and Wild Ecologies

In my talk, I will consider the interaction of human and machine musical agents and use examples from my artistic work. I will view agency as an emergent characteristic in human-machine interaction (Pickering 2010). Continuing the discussion of agency into a concept of wild ecology and energy, I want to emphasize the emergent qualities of interaction. This will lead into a discussion of concepts of listening as ecological practices in human-machine interaction and other kinds of ecologies of agents, which I call ‘cybernetic listening’. Relating Lewis’ discussion of human-machine improvisation, I want to raise the question of technology, as a concept that is negotiated in the practice of human-machine improvisation. Relating to Hui, Stiegler, Heidegger, and Eshun, I want to argue for the contingency of the very concept of technology that is enabled through the practice of human-machine improvisation. Arguing for the different forms of ecology brought about by the practice of human-machine improvisation, I want show how the practice can undermine seemingly fixed concepts of technology, how the practice can help to reframe the enframing that is technology and help to archive a pluralism of concepts of technology, a ‘thousand ecologies’ (Hörl 2013).

primordial topology within which energy flows directionally. CICs thus set up a stress-energy tensor field and energy flows directionally in response to the field's topology. Context-dependent constraints, on the other hand, specify and individuate trajectories within that possibility landscape; mass embodies attractors that emerge when multidimensional context-dependent constraints intersect. Such emergent phenomena in turn reshape and resculpt the fundamental ground – they turn it rugged and individuated, in other words. From this perspective, the classical notion of Form can be reconceptualized as constraint regimes that govern individual actions such as to preserve the integrity of the systemic complexity.

Keynote Speaker

Chair: **Natasha Lushetich****Àdèjòkè Túgbiyélé****17:30-19:00 GMT*****Queer Energies in Yoruba Art and Architecture***

In Yoruba cosmology, Àsẹ is the power to make things happen – Life Force-Energy. In this talk I will focus on its dual aspects Àṣẹ / sùúrú (or) 'action/inaction' with reference to my art and architectural practice: Metà (the number 3) and the notion the 'trinity', which guides towards 'seeing' differently, and Àdìrẹ (to tie and dye), which enables a discernment of the 'markings' one finds on indigo-dye textiles (which, unlike colour, have been much less explored), and the sacred geometric forms inherent within the markings. I will show how both Metà and Àdìrẹ are transformative energies that queer materials, as explored in my 2022 work *Visible/Invisible*. *Visible/Invisible* extruded the two-dimensional form of the Yoruba symbol Solomons Link into the three-dimensional plane, showing how queer energetic transformations inform disciplines beyond art and architecture, from biology to fashion.

Àdèjòkè Túgbiyélé's practice explores queer Yoruba aesthetics, challenges homophobia and stands in solidarity with the notion that 'Queer Love is Not UnAfrican!' Their work reveals how Yoruba philosophy embodies parallel conceptual frameworks that exist within Taoist, Buddhist and Hindu thought. Túgbiyélé studied Fine Art after two decades in the field of architecture, receiving a Masters in Fine Art from Rinehart School of Sculpture at Maryland Institute College of Art. Túgbiyélé holds a Bachelor of Science in Architecture from Hillier College of Architecture and Design at NJIT, was awarded the Joan Mitchell Center Artist Residency in New Orleans in 2024 and in 2019 the Prix Leridon, presented by Gervanne Leridon Matthias Collection at BISO2019.

Panel 17

Chair: **Undine Sellbach****Feminist Materialities**

9:00–10:30 GMT

Tamar Grosz Moraga

TECHNICAL UNIVERSITY OF BERLIN

Lithium, Energy, and Matter: New Material Feminist Exploration of Andean and Western Cosmivision

When capitalist ambitions couple with dreams of limitless energy production and omnipotent fantasies, they accelerate bodily, cultural, and ecological processes. Diverse cultural forms are moulded into a singular fantasy of a future of green technologies, while various beings passively yet forcefully sustain an extractive system, only to be subsequently disposed of as 'unprofitable', leaking into a cultural and political void. In the Atacama Desert, ancient salt beds of lithium are awakened from their eons-long dream. Extracted from the brine, purified lithium emerges readily accessible in our hands, as energy resources for cars, cell phones, and electric devices. This perpetuating cycle has constrained Western cultures to a daily reliance on energy technologies; lithium batteries, temporarily holding energy, ensures a continuous surge of energy at demand, solidifying hegemonic realities.

Núria Muñoz Garganté

MAX PLANCK INSTITUTE FOR THE HISTORY OF SCIENCE, BERLIN

Active Matter: exploring the intersection between physics and feminist materialism

Recent decades have seen a renewed ambition to theorize matter as an active agent rather than a passive substance. In this talk I will focus on two fields that are engaged in this turn: 'new feminist materialism' and the subfield of 'active matter' in condensed matter physics. Despite their apparent connection, these two fields have not been brought into contact, even though important works on feminist new materialism have drawn inspiration from physics to propose theories about material agency (Barad 2007). I will situate the recent field of 'active matter' within the history of condensed matter physics and their efforts to reconceptualise matter as more than the sum of its parts. The evolution of condensed matter physics, from its origins in the study of apparently inert solids like crystals to its current focus on dynamic active systems, provides insights into the historical and epistemological evolution of matter as an autonomous and creative agent in physics. This trajectory can inform feminist theories about unexplored conceptions of matter as active, offering a nuanced understanding grounded in a critical and historically informed engagement with physics.

Arwa F. Al-Mubaddel

CARDIFF UNIVERSITY/KING SAUD UNIVERSITY

Entangled Energies in Piercy's Woman on the Edge of Time (1976) and Alderman's The Power (2016)

This paper examines Piercy's *Woman on the Edge of Time* (1976) and Alderman's *The Power* (2016) through Barad's agential realism, particularly their theories on energy and entanglement. Barad's concept of intra-action, where entities co-constitute one another through their interactions, provides a framework for analysing how these novels depict energy as both a material and social force. In *Woman on the Edge of Time*, Ramos' telepathic and time-travel abilities embody quantum entanglement, reflecting Barad's idea that the present and future are co-constitutive, with agency distributed across time. This highlights the ethical implications of multiple potential realities. In *The Power*, women gain the ability to generate electrical energy, reshaping gender dynamics and societal structures, illustrating Barad's notion of intra-action as characters' identities evolve through this power. The novels explore the material-discursive nature of power, intertwining physical

Panel 18

Chair: **Natasha Lushetich****Cartographies & Infra-structures**

9:00–10:30 GMT

Lena Galanopoulou

NATIONAL TECHNICAL UNIVERSITY OF ATHENS & TU DELFT

Wisdom Tooth: Nested Energies of Urban Infrastructures

In the realm of urban development, certain cities are designed or transformed to serve as integral nodes within extensive energy transmission networks. These urban areas evolve beyond traditional civic functions to become nexuses within an infrastructural network, where their roles extend significantly, manipulating vector-paths through which information and resources are transmitted and managed across different scales. This phenomenon raises critical questions about the inherent locality or universality of infrastructure, urging a reconsideration of how cities can be both shaped by and shape the imperatives they are built to support. Is infrastructure moulded by local needs and conditions, or does it mould them in turn? This inquiry challenges us to discern whether what we are dealing with is truly infrastructure, which implies integration and support within a particular context, or an overstructure, a broader framework imposed regardless of local specifics. Drawing from De Landa's concept of urban exoskeletons, the research aims to advocate for understanding infrastructure not just as physical constructs but as complex systems, provoking a rethinking of how we design, implement, and interact with infrastructural systems that facilitate the flow and transformation of energies within socio-techno-environmental contexts.

Tsering Lhamo

INDIAN INSTITUTE OF TECHNOLOGY, DELHI

Lha, Lhu, Sadak and Humans among Pastoralist Nomads in the Trans-Himalayas

The pastoralist nomads of Changthang share close relations with their landscape. For them, landscape is imbued with vitality with the presence of lha, lhu, sadak who dwell mountains, water bodies, and the earth respectively. These non-human beings are non-corporeal and non-organismal beings who make their presence known through rtak (inferences) or manifestations. They exist alongside human beings and are not subservient to the latter. Disturbance caused to these beings invite misfortune and deprive the place of their chinlabs (blessings). This shows that these physical components of the environment are not inert or passive rather backed with powerful force or energy. The presence of human and non-human beings here, lha, lhu, sadak ensure entanglement and thundel zangpo (harmonious coexistence). Provided Changthang is a border region (Indo-China border), state-led construction of roads remains a perennial process which takes place by dismantling mountains. Furthermore, Changthang propagated as a popular tourist destination in India causing major influx of tourists in summer generating increasing threat to nature and water bodies. Quite recently, a thang (vast stretch of land) is earmarked for the world's largest solar power plant installation at Changthang in 2021–2022. This move reveals difference in ontological approaches, for the state, thang is perceived as a wasteland being utilised for solar power generation, for pastoralist nomads, it is a grazing ground for animals as well as a site where sadak dwell. In this context, the state is a harbinger of change causing major transformation in the landscape.

Gair Dunlop

UNIVERSITY OF DUNDEE

Infrastructure and the Obscene Exception

Bervie Brow is an intact Cold War nuclear bunker and listening post on a 28-acre site on the northeast coast of Scotland. With wind turbines and oil rigs on its horizon and electricity

abilities with societal narratives on gender. Both works challenge conventional ideas of power, agency, and reality, emphasizing the ethical responsibilities arising from the complex entanglements that shape existence. Through Barad's lens, these novels urge a rethinking of our ethical responsibilities in an entangled world.

Bart Welling

UNIVERSITY OF NORTH FLORIDA

Exploring Multicultural and Multispecies Energy Worlds with Deborah Bird Rose

Without ever claiming to be a practitioner of the energy humanities, Deborah Bird Rose issued an incredibly forceful challenge to the modern Western energy paradigm. In her decades of work with Indigenous people and settlers in Australia and in her analyses of mutualistic relationships between such nonhuman life-forms as flying foxes and Eucalypt trees, Rose unwittingly joined Michael Marder, Cara New Daggett, and other scholars in revealing many of the catastrophic limitations of this paradigm. In this paper, I show how Rose's subtextual critique of capital-e Energy and her passionate, poetic engagement with the Aboriginal aesthetic and ethic known as *bir yun* (shimmer) can light the way forward not merely to carbon neutrality but to restored multicultural, multispecies energy worlds characterized by meaningfulness, connectedness, and, indeed, joy.

cabling in the process of controversial nearby installation, the site is currently witness to the next massive infrastructural change of the east coast to a landscape and seascape of renewable energy. A recent rise in interest in 'rural modernism' (e.g. the 'New Lives New Landscapes Revisited' conference and publication by the British Academy, 2023) is characterised by an examination of ways in which postwar infrastructures in rural environments changes the conditions of life. If we treat the Bervie bunker site as part of a spectrum of the built environment rather than as an extreme/obscene exception, what can we learn for reception of infrastructures of the future?

Panel 19

Chair: **Natasha Lushetich**

Potentia & Potestas

11:00-12:30 GMT

(Shajara) Hilan Bensusan

UNIVERSITY OF BRASÍLIA

Extraction, agency and affectability

Energy is ordinarily conceived in association with its storing: where to find it, how to extract it and how to preserve it. While with his notion of Ge-Stell Heidegger meant something broader than energy extraction, it is telling that his model fits well, as his examples show, the efforts to make energy reachable. Current public debates see energy as a resource and this places it in a (human-centred) framework according to which it is about extractors that display full-blown agency and items from where the extraction takes place. The dualism is one between free consumers that command and matter that is kept at bay. This (dualist) framework can be challenged by two critical monist proposals. They are related but different and while one is associated with Indigenous animist groups the other is connected with the emerging thinking of the African diaspora in the Americas. The first monist proposal is to spread agency, make it dispersed and distributed so that not only (some) humans but also most (non-human) things are ascribed with the capacity to originate action. The second, contrasting monism, is to exorcise the very framework of agency in order to dismantle the excluding category of the human. The contrast of both positions is echoed by contemporary debates about matter where we find the first pole represented by thinkers like Latour, various Whiteheadians and, to some extent, Harman, while the second is close to most new materialists like Barad and kinetic materialists like Nail. This paper discusses this tension between the two (monist) positions stressing their critical similarities while focusing on different ways to understand energy that moves away from the paradigm of extraction.

Simon Önnared & Valeriy Chichilanov

MÅLARDALEN UNIVERSITY, DEPT. OF INNOVATION MANAGEMENT

Four Scenarios of Energy-as-a-Worldview: Emergent trajectories of human-energy relationships

Panel 20

Chair: **Rowan Lear**

(E)motive Vectors

11:00-12:30 GMT

Roshni Babu

Tantric Energies and Bodily Entropies

Tantra as practice conceptualises human body as an energetic system. This paper will examine the demonstrables of Tantric powers in different Tantra schools in order to underscore their presupposed notions of entropy or lack thereof. Viewing body as an energetic system would entail that despite containing bodily channels of renewable energy, in principle, the quality of energy will diminish over time. How does this impact the conceptualisation of Tantric practices as life enhancement techniques? In certain other contexts, Tantra is also posited as a set of techniques tapping into the renewable sources of bodily energies. Is this conflation between well-being and life-enhancement meaningful? Leaving aside the controversies surrounding the mobilisation of Tantric-Yogic symbolism being tailor-made to serve the neo-liberal framework of well-being market, this paper focuses on the sparring concepts of Tantrism, delineating its concept of entropy. Most well-being conceptions of Tantric energies imply harmonisation as its main import. This paper builds on aberrant readings. One of the ostensive objectives of Tantric techniques is stimulation of psychic-energy, seated below the navel into the head through nerve-channels within the body. What is it to pilgrimage at different body-stations? Technical milieus of Tantric techniques come into focus here; they need to be situated in an entangled web of objects and rituals, evoking Barad's concept of agential realism and breaking down the veil of self-mastery, the imagery often associated with its valorisation. I will build on different readings of Barad's diffractive method to understand the intra-active milieu of Tantra and the dissipative structures it entails in the background of vitalist accounts of new materialism.

Rumeli Mukherjee

INSTITUTE OF LANGUAGE STUDIES AND RESEARCH, KOLKATA & JADAVPUR UNIVERSITY

Envisioning a holistic medical episteme of the mangroves land of Bengal

Human hubris and dogmatism over its non-human counterparts has gradually led us to the age

The future of energy systems, sectors, and markets is uncertain and changing. These changes entail a fundamental shift in how we relate to, consume, and commercialise access to energy. Drawing upon major debates around energy transitions, we create four speculative energy scenarios from a cross-cultural perspective. Based on different worldviews, cultural perspectives, and structures of energy systems we frame these scenarios as Energy-as-a-Commodity, Energy-as-a-Service, Energy-as-a-Commons, and Energy-as-a-Practise. With all these different configurations of energy systems, we ponder upon how they may influence the energy consumption behaviour of people, how they may drive different trajectories of consumption, and how they may change the relationship between people and energy. Together, these four energy scenarios provide an explorative yet deepened understanding of potentially transformative changes to energy systems' connection with society.

Erin Rizzato Devlin

UNIVERSITY OF GOTHENBURG

Energopoeia: The Making and Unmaking of Energy Worlds

Energy politics lie at the heart of human activity. In times of environmental crisis and climate change, it is of fundamental importance to explore the full possibilities of technology in a radical way to respond to the challenges of a changing energy landscape. This presentation will thus consider the ethical implications of energy and its related technologies, opening up the opportunities for diversification of world-views, knowledges and technologies to include those which are often marginalised or excluded in the narratives of global politics. This will draw from the field of anthropology to highlight how the human species [has been made] the biological analogue of the anthropological West, confusing all the other species and peoples in a common, private alterity (Viveiros de Castro, 2014). Moreover, it will present a case for cosmotechnical pluralism (Hui, 2020), advocating for global politics that are able to account for the existence of several ways of navigating and knowing the energy world: this is what the Zapatistas call a world in which many worlds fit.

Esa Kirkkopelto

TAMPERE UNIVERSITY

Energetic Objects on Stage in Science and in Everyday Life

To say that a phenomenon is 'energetic' is to say that it has a certain potential, and that it is capable of releasing and using it. Energetic phenomena attract our attention and create a horizon of expectation around them. The phenomena that result from artistic creation are typically like this. Since they are not subject to any practical purpose it is possible, through artistic arrangements, to open up a phenomenological perspective on energy. In my lecture-demonstration, I will first show how an everyday object, any object, can become energetic through its scenic embodiment. Secondly, I will show how these virtual (and therefore potential) transformations or 'becomings' are based on a superpositional logic, on the capacity of an entity to be located simultaneously in two different frames of reference. This discovery leads us to recover the initially structuralist idea of 'floating signifiers' (Lévi-Strauss 1950; Gil 1998). Their ability to knit together different referential systems is based on their simultaneous belonging to both and to neither (Deleuze 1972). Finally, I will show how floating signifiers can be staged and thus re-embodied. The demonstration raises the question of the extent to which our understanding of energy and potentiality is mediated by, and thus dependent on, energetic phenomena. How might the study of energetic phenomena help us renew our understanding of matter?

of imbalance, chaos and the Entropocene (Robbins 2018). Within this realm of turmoil, a frantic hunt for convivial living barring the binary dichotomies of North-South, East-West, Human-Nonhuman, and Greed-green is earnestly vouched for. In the mangrove lands of Bengal, it is interesting to envision how a syncretic approach of holistic healing is preached that is plant-based, highly dependent on Humoral theory and convolutes the seamless exposure to both ayurvedic and Islamic medical practices that emit the rays of convivial energy. This proposal would thus, look into how the fringes of swamp areas of Sunderban in Bengal, the indigenous people dwelling there, not only co-exist with the hardships of weather and wildlife but also co-exist with the epistemes of hinduyani and musalmani (Stewart 2023) medical practices. A genealogy of our psychological and ideological impulse toward convivial living, adopting an ecophenomenological approach an alternative energy practice would also be attempted, along with an empirical visualization of both the then-current society and the current reality.

Tom Nurmi

NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

Energy, Race, and Resistance in the Federal Theater, 1935-1939

The U.S. Federal Theater Project was a short-lived but remarkable moment in the history of stage performance: a four-year span of government investment in the arts that brought nearly thirty million Americans to the theatre for the first time during the bleakest years of the Great Depression. It was also the first racially integrated theatre programme in the U.S., where Black and white playwrights, directors, and actors worked together to produce an incredible diversity of dramas and comedies that addressed, often in radical ways, pressing racial and social issues laid bare by the 1929 economic collapse. But scholarly attention has missed how many of these works directly attended to the entanglement of energy and environment within infrastructures of race and economy, primarily because most of the plays remain unpublished and unread, obscured in various archives. This paper recovers two energy plays of the FTP written by Black authors to reposition Black theatre as a critical space for the energy humanities, historically and in our present moment.

Philipp Quell

UNIVERSITY OF VIENNA

The vitality of knowledge, the knowledge of vitality

Nowadays, energy is a notion everyone seems to understand intuitively. It is a measure for the quantity of substrata that is available to produce certain things. Consequently, such a notion of energy determines the amount of commodities available for consumption or modification for the purpose of an individual's or society's growth or joy. In contrast to such an understanding of energy, I will re-read selected passages of Aristotle's *Metaphysik* where he elaborates the concept of *ἐνέργεια* and engenders a very different perspective of human embeddedness to a contemporary conception of energy implies. In fact, the notion of energy is etymologically rooted in *ἐνέργεια* and used in Aristotle the first time. So in a hermeneutical manner, that we can gain a new perspective on our self-understanding and how we conceive of human relation to nature in our lived social praxis through outlining the opposite conceptualisation of energy in Aristotle. *Ενέργεια*, according to Aristotle, is not a measurable concept but the concept of reality, and due to his ontological conception, could be understood as potent materiality. Literally it means 'in (ἐν) the work (ἔργον)' or to paraphrase 'being real', and this indicates that every individual being has in itself potentials that unfold in encounter with other materialities. Consequently, every individual being has an environment (*περίεχον*) and every becoming is a relationally embedded stance not the actualisation of an isolated seed that inherits in its gestalt just waiting to unfold. In contrast, the actualisation is a heterogenous and polymorphic process and therefore every individual's ability is entangled and embedded in a relational field of materiality. In short, the material context of an individual for being real could not be a mere accidental attribute which does not affect its essence in any way. If individuality is real environment could not be a mere commodity, but the individual is an environmental modality.

Keynote Speaker

Chair: **Natasha Lushetich****Michael Marder****13:15–14:45 GMT*****A Brief – and Still Unfinished – Philosophical History of Energy***

In this talk, I propose a philosophical (dialectical) reading of the concept of energy as it unfolds historically. First, I will discuss the positive charge of *energeia* in Aristotle, who identified it with the actuality of the actual. Then, I will attend to the negative charge that re-signifies the term, bestowing on it the exact opposite sense of potentiality. Rather than a radical correction of Aristotle, this polarising modern signification unfolds in the field prepared in, if also rejected by, Greek Antiquity and unblocks the electric current of the concept of energy, a directional flow of charged particles of meaning from the positive to the negative pole. Still, the flow does not just happen by itself: the equivalent of electromotive force (EMF) is a fresh glance at the history of philosophy not as a field dotted with static monuments to past intellectual achievements, but as an electric, or electromagnetic, semantic field. Only by grasping the conceptual circuitry of energy as a whole will we be in a position to appreciate the sorts of choices that are being made in the context of the contemporary 'energy transition' and as well as its possible futures.

Michael Marder is Ikerbasque Research Professor of Philosophy at the University of the Basque Country, Spain. An author of eleven books and over a hundred academic articles, he is a specialist in phenomenology, political philosophy, and environmental thought. His monographs include *The Philosopher's Plant: An Intellectual Herbarium* (2014); *Pyropolitics: When the World Is Ablaze* (2015); *Dust* (2016); *Grafts* (2016); with Luce Irigaray, *Through Vegetal Being* (2016); and *Energy Dreams: Of Actuality* (2017).

Workshop 1

Chair: **Rowan Lear****Lithic, energetic embodiment****15:15–16:15 GMT****Liz Pavey**

NORTHUMBRIA UNIVERSITY

In this movement workshop you will be guided through a series of embodied experiences exploring our elementality as air, water and rock. Please have to hand a small rock, pebble or fossil to explore, connect to and move with. The work supports us to tune into our energetic aliveness and encourages a questioning of the social imagination of rock as something static, lifeless and separate from us. The practice will be contextualised through a brief presentation referencing how my practice research project *Living Stone* is engaging with concepts of earth, energy, materiality, life/non-life, and intra-being. No previous dance/movement experience necessary. *Living Stone* investigates how durational improvised dance can help us make sense of the immensity and rhythms of geological time through developing an embodied sense that we carry deep time within us. Informed by eco-somatic practice, deep ecology, geology and philosophy, the practice explores the figurations living stone, living fossils and deep time bodies. To date, the project has encompassed three Deep Time Walks, a participatory project, and three performances at the Great North Museum Hancock responding to the museums Frosterley Marble, Fossil Stories Gallery, and working with bones, rocks and fossils from their handling collection.

Workshop 2

Chair: **Joel White****Energy Futures****15:15–16:15 GMT****Terra Schwerin Rowe & Joseph Campana**

UNIVERSITY OF NORTH TEXAS & RICE UNIVERSITY

Are other worlds, other energies, other energy infrastructures possible? Too often we are impeded in our work for energy justice by a perceived lack of alternatives. Such deficiencies are certainly rooted in material conditions – and interrelatedly, inadequate imaginative capacities. In addition, many people who are neither scientists nor employed in energy industries feel intimidated by their perceived lack of knowledge. As a consequence, they resist engaging – creatively, constructively, or critically – with energy discourses. As the facilitator's introduction to this game explains, "The purpose of this Energy deck is to playfully imagine how to turn your current conception of energy on its head – to dig back into time, sideways into both real and imagined possibilities, and forward into the larger frame of what constitutes energy – that is: source, distribution, and attitude" (*More&More Energy Futures, Energy Facilitation Guide*). This game encourages non-specialists to claim energy as their discourse, engage it, test it, and imagine it otherwise.

Speakers

Arwa F. Al-Mubaddel is a final-stage PhD candidate at the School of English, Communication, and Philosophy (ENCAP) at Cardiff University. Her thesis focuses on metamodernism and feminine subjectivity in British women's writing from the 1960 – 90s. Arwa was the co-chair of the Modern and Contemporary Postgraduate Network (MoCo PGR) at ENCAP from 2020 – 22 as well as Editor-in-chief of the Cardiff University Press Journal *Intersectional Perspectives: Identity, Culture, and Society (IPICS)* from 2020-22, where she currently serves as Advisory Board member.

Saoirse Amira Anis' creative practice prioritises radical care, informality and empathy, influenced by their Scottish and Moroccan heritage and underpinned by interests in Black queer theory, Disability Justice, and politics of liberation. Through writing, moving image and performance, they consider how the body holds ancestral and lived memories, particularly in relation to guilt, shame and resistance. Recent projects include solo shows at Dundee Contemporary Arts (2023) and *Cample Line* (2022), and major commissions for *Art Night* (2023) and *Platform*, Edinburgh Art Festival (2022).

Roshni Babu (PhD IIT-Bombay) is an Independent Researcher. Her research focus is on philosophy of technology, Indian philosophical alternative-modernities, and feminist materialism. Her recent publications are: 'Tending Immanence, Transcending Sectarianism: Plane of Mixed Castes and Religions' in *Caste (A Global Journal on Social Exclusion)*, 2(2) 359–374, 2021; 'Psychagogy or Pedagogy?: Techniques and Ethos of Philosophical Therapeutics' in *Biopolitics and Healing in a Mass Milieu* (Routledge 2024); 'Coyote Figurations, Techne and Feminism' in *Technophany* 2(1), 1–18, 2023.

Bruno Belém is a psychoanalyst and postgraduate student in Philosophy at the University of São Paulo (USP). Certificate student in Critical Philosophy at The New Centre for Research & Practice. Interests: self-organization of complex multiscale systems, obsolescence and spectacularisation of politics, psychoanalysis and language theory.

Hilan Bensusan is a philosopher working on the connections between thinking and the world, especially in terms of the cosmopolitical impact of human intelligence (and its artificial counterparts). This research is often engaged with issues concerning energy and how storage has been central in its very concept. Bensusan currently works at the University of Brasília.

Peter Blamey is an independent artist based in Sydney, Australia. His practice is largely sound-focused and includes performances, videos, recordings and installations. His work explores the interconnected themes of energies and residues, reimagining everyday experiences with materials and the physical world and how they relate to production, usage and waste.

Pedro Brea is a Lecturer at the University of Colorado Boulder and the University of Colorado Denver. His research explores forms of temporality beyond the traditional linear time of western science and metaphysics, towards a non-representational account of the past.

Nicolas Cadieux is a PhD student in anthropology at the University of Ottawa. His research focuses on energy infrastructures in (post)colonial and (post)industrial contexts. More specifically, he is interested in hydraulic, hydroelectric, and nuclear energy systems and networks harnessing the waters of the Ottawa River (Kitchissippi) in Canada's Capital Region.

Joseph Campana is a poet, arts writers, and scholar of early modern culture, with broad interests in energy and environmental humanities. He directs the Center for Environmental

Studies in the School of Humanities at Rice University, and also EcoStudio, an arts, media, community hub at the Rice Sustainability Institute.

Ramón del Buey Cañas is a Spanish researcher, with a formal background in Philosophy (PhD; Universidad Autónoma de Madrid) and Environmental Humanities (MA; Universidad Politécnica de Valencia & Universidad Autónoma de Madrid). He is a member of the Research Group in Ecological Humanities (GHECO, Universidad Autónoma de Madrid).

Désirée Coral is an Ecuadorian artist based in Scotland. Désirée explores and examines early global exchanges from the Americas to the world and vice-versa. She has exhibited at Tignous Centre for the Art, Paris. CCA Glasgow, MOCAD Detroit, Sullivan Galleries, Mana Contemporary, and CAC Quito, among other international venues.

Valeriy Chichilanov is an alumnus of Malardalen University in Sweden, now an independent researcher based in Bangkok, Thailand. He holds degrees in art, business, and innovation and has experience working in business and education sectors. He has broad interests in (macro-) marketing, innovation, futures studies and pedagogy.

Clayton Crockett is Professor of Philosophy and Religious Studies at the University of Central Arkansas, and Director of the interdisciplinary Religious Studies program. He is the author or editor of a number of books, most recently *Energy and Change: A New Materialist Cosmotheology* (Columbia University Press 2022). He is also a member of and participant in the Energy Extraction and Religion Seminar at the American Academy of Religion.

Gabriella Daris is completing a philosophy of art doctoral project in the Centre for Research in Modern European Philosophy. Her thesis examines critically the ontological distinctiveness, metaphysical importance, and social significance of Yoko Ono's conceptual art.

Erin Rizzato Devlin is a researcher, writer and journalist based between Scotland and Sweden. With a background in philosophy, politics and environmental ethics, her academic work explores energy in its social, cultural, ethical and technological declensions. She has written about energy in both academia and journalism, as an environmental reporter for Sustainable Growth Voice and translator for Low Tech Magazine.

Léa Dreyer is a PhD candidate and a teacher of contemporary art history at the University Paris 1 Panthéon-Sorbonne. She specializes in media arts, sound arts, and experimental sound practices, and is preparing a dissertation on the media and sound work of Lars Fredrikson (1926 –1997). She is a member of the IMAGO-Visual Cultures research team as part of the Tele-Visions project. She co-organized the international conference 'Tele-Visions: Technologies of Ubiquity in the Visual Arts' in 2023 and is co-editor of the forthcoming issue of VIEW journal, entitled 'Echoes and Frequencies: Tele-Visions and Wireless Technologies'.

Gair Dunlop makes artworks which explore entropic Modernism: the New Town, the military airfield, the film archive and the memory of progress. Beginning as a photographer in London and gaining a degree in Photography from the Polytechnic of Central London, and an MSc in Electronic Imaging from the University of Dundee, he is interested in combining elements of site-specific practice with digital technologies. Investigations have developed into engagements with sites of secrecy: military zones, scientific test establishments, and other evidence of the 'dark side' of Modernism.

Josephine Ellis is a PhD student in the research project *Activating Fluxus*, funded by the Swiss National Science Foundation, based at Bern Academy of the Arts and the University of Bern. Her interests are in the intermedial materialities of the 1960s and the histories and theories of art and conservation.

Breck Furnas is currently a PhD candidate at UC San Diego whose research focuses on the histories of Western aesthetic philosophy and technoscience and how it problematises our relationship to the environment. I am developing an eco-aesthetic theory that includes the phenomenology of the body and our encounters with the more-than-human to reframe the experience of climate change.

Dr. Giovanni Frigo is an environmental and energy ethicist currently working as researcher in the Philosophy of Engineering, Technology Assessment & Science (PhiletAS) Research Group at the Institute for Technology Assessment and Systems Analysis (ITAS) at the Karlsruhe Institute of Technology (KIT). Born and raised in the Italian Alps, he studied at the University of Verona, Italy, and at the École des Hautes Études en Sciences Sociales in Paris, France. In 2018 he received his PhD in environmental ethics from the University of North Texas (UNT) in Denton, TX, USA. His interdisciplinary research focuses on the fundamental links between ethics and energy.

Lena Galanopoulou is a PhD candidate at the School of Architecture of the National Technical University of Athens (NTUA) and a scholar of the Hellenic Foundation for Research and Innovation (HFRI). She holds a MArch (equivalent Diploma, NTUA) in architectural engineering and an MSc in architectural research (NTUAs interdisciplinary postgraduate program, Theory of Knowledge).

Núria Muñoz Garganté is a postdoctoral researcher at the Max Planck Institute for the History of Science in Berlin. With a background in physics, her recently submitted PhD dissertation examines the historical epistemology of the philosophical concept of emergence in physics. Her interests lie at the intersection of the history and philosophy of science, particularly physics, and feminist epistemology.

Pia van Gelder is a Lecturer at the Australian National University researching conceptions of energy and how they shape our relationship with technology, bodies and our environments. Their current project *The Energies Artists Say* with co-editor Douglas Kahn, presents a methodology for understanding the polyvalence of energies in practices across the arts.

Indigo Gray is a third-year PhD candidate in the School of English at the University of Sheffield, funded by the White Rose College of the Arts and Humanities. Her thesis maps changing views of labouring human and nonhuman bodies in Victorian and pre-war coalmining literature.

Stephanie Gray (they/them) is a grassroots organizer, ritualist, and scholar, based on Quapaw, Osage, and Caddo land (Arkansas). They are the founder of Taste of Olam Haba, a community centered in queer/crip Jewish tradition. They are currently a Research Fellow and Ph.D. candidate in Critical Theory at the Global Centre for Advanced Studies.

Tamar Moraga Grosz is a Berlin-based dancer, choreographer, and improvisation teacher. She holds a master's in physics and is pursuing a PhD at TU Berlin on green energy in the Andean mountains from a feminist perspective. Founder of FEM and Mo.Re collectives, her artistic work touches on intimacy, humour, the sociopolitical and spirituality.

Olena Gruba is currently a member of the Philosophy of Engineering, Technology Assessment & Science (PhiletAS) Research Group at the Institute for Technology Assessment and Systems Analysis (ITAS) at the Karlsruhe Institute of Technology (KIT). She was born in Lviv (Ukraine) and received bachelor and master degrees in history of Western philosophy from the Ivan Franko National University of Lviv. Her research interests are focused on the ethics of architecture and value-sensitive design.

Inna Häkkinen, PhD, is a research fellow of Helsinki Environmental Humanities Hub, the

Department of Cultures, the University of Helsinki. Her current project is on the literary dimensions of nuclear energy within energy literary narrative frames. She coordinates/co-teaches courses 'Chernobyl Studies', 'Nuclear Narratives in East Central Europe' at the University of Helsinki.

Oswaldo Emiddio Vasquez Hadjilyra is a PhD candidate in the transdisciplinary program Media Arts and Sciences at Arizona State University. His research interrogates the philosophical and aesthetic implications of treating digitality and computation within a materialist framework, by looking at alternative histories of computation and enacting them in media technologies.

Nicola L. Hein is a sound artist, guitarist, composer, researcher in the field of music aesthetics and cybernetics and professor for Sound Arts & Creative Music Technology at the University of Music Lübeck. He uses cybernetic human-machine interaction with interactive A.I. music systems, augmented reality, telematic real-time art instrument making.

Leon Hirt is a visiting postdoctoral researcher at the University of Cambridge as well as an affiliated researcher at the University of Geneva. His current research seeks to illuminate how scientists imagine negative emission technologies in the context of human-induced climate change and in relation to climate mitigation and adaptation measures.

Louisa Iarocci is an Associate Professor of Architecture at the University of Washington in Seattle. She is a licensed architecture who has worked in Canada and the US. Her current research focuses on the forms and operations of the architecture of the supply chain in North America.

David Jaclin is currently an Associate Professor at UOttawa's School of Sociological and Anthropological Studies. He heads the HumAnimaLab. At the intersection of Anthropology and Communication Studies, his research draws on informational and communicational processes at play in human-nature relationships, with a particular focus on their emergent socio-cultural implications and evolutionary dimensions.

Alicia Juarrero is author of *Context Changes Everything* (MIT Press 2023), Visiting Research Associate, University of Miami (FL) CEO and CO-Founder, VectorAnalytica

Douglas Kahn, author of *Noise Water Meat: A History of Sound in the Arts* (1999), *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts* (2013), and editor of *Energies in the Arts* (2019); is Emeritus Professor at University of California at Davis and UNSW, and Honorary at University of Sydney.

Maria Karszenberg researches extractivist landscapes and their transition as part of an interdisciplinary PhD at Glasgow University. She builds on a background in geology, philosophy of science and human geography in order to understand the relationships between the earth and society and the ways in which these disciplines interrelate.

Rosemin Keshvani is a PhD candidate at Kingston University CRMEP. She is researching Kant's notion of the feeling of life' [das Lebensgefühl] and its implications for Kant's aesthetic and critical philosophy in informing the production of knowledge of nature and the possibility of a transcendental theory of life.

Esa Kirkkopelto is a philosopher, artistic researcher, and performance artist. He is currently Professor of Artistic Research at Tampere University and holds the title of Docent in Aesthetics at the University of Helsinki. He is a former board member of the Society of Artistic Research (2022 – 2024); former core convener of the Performance Philosophy Association and organiser of the Helsinki 2022 Performance Philosophy Biennial; and founder member

of the Other Spaces performance collective (2004–). His monograph titled *Logomimesis. A Treatise on Performing Body* is forthcoming with Routledge in 2025.

Ingrid Koenig is inaugural Artist in Residence (2011 – 2021) at TRIUMF, Canada's particle accelerator centre, and Associate Professor at Emily Carr University of Art + Design, Vancouver. Her studio/research practices traverse fields of physics, social history, feminist theory, and narratives of science. Through fieldwork her drawings map complex interactions.

Stavros Kousoulas is Assistant Professor of Architecture Philosophy and Theory, and research coordinator at the Theories, Territories, Transitions section at the Faculty of Architecture and the Built Environment, Delft University of Technology. He is the author of the book *Architectural Technicities* (Routledge 2022).

Tsering Lhamo is a Ph.D. scholar at Indian Institute of Technology, Delhi in Humanities and Social Sciences (Sociology unit). My Ph.D. research is with pastoralist nomads of Changthang, Eastern Ladakh (in the Himalayas, India). It is a holistic understanding of relations shared by the pastoralist nomads with their place. It is an ethnographic research allowing for an in-depth study with the pastoral nomadic community about their distinct and unique worldview and inclusive way of life.

Barbara Larson is an art historian who specializes in intersections between science and visual culture, especially concerning evolutionism, medicine, aesthetics, and anthropology. She has written or edited four books (*The Dark Side of Nature: Science, Society, and the Fantastic in the Work of Odilon Redon*, *The Art of Evolution: Darwin, Darwinisms and Visual Culture*; *Darwin and Theories of Aesthetics and Cultural History*, and *Constructing Race on the Borders of Europe: Ethnography, Anthropology, and Visual Culture: 1850-1930*).

Marie Lecuyer is a postdoctoral fellow and the co-lead of the Critical Media Club in the department of anthropology at McGill University. Her doctoral thesis focused on the oceanic turn in funeral rites in the Hong Kong archipelago and explored the way in which an oceanic environment dissolves traces of past lives and reconfigures ways of commemorating the dead. At the crossroads between environmental anthropology, death studies and media studies, her current research focuses on ways of anticipating and remediating flooding phenomena in Hong Kong and Ottawa.

Tiger Liu is a PhD student at the Centre for Research in Modern European Philosophy (CRMEP) in Kingston University. He is currently working on a project entitled the Idea of Human Extinction, focusing on the philosophical origin of the idea and the ways in which the romantic and idealist legacy that underlies this idea implicitly structures contemporary thoughts. He completed his MPhil in the same institution with a thesis on the discourse of masochism, focusing on the writings of Freud, Bataille, Blanchot, Deleuze, and most importantly, Leopold von Sacher-Masoch.

Dr. Tetiana Lysokolenko is a Postdoctoral Researcher in the Philosophy of Engineering, Technology Assessment & Science (Philetas) Research Group at the Institute for Technology Assessment and Systems Analysis (ITAS) at the Karlsruhe Institute of Technology (KIT). She was born in Donetsk region, Ukraine, she studied at the Lugansk National Pedagogical University, Ukraine, and at the Slavic state Pedagogical University, Ukraine. She received her PhD in history of philosophy from the Dnipro National University, Ukraine. Her research interests are focused on the study of games in various areas of philosophy.

Cecile Malaspina, author of *An Epistemology of Noise* (Bloomsbury, 2018), principal translator of Gilbert Simondon's *On the Mode of Existence of Technical Objects*. Directrice de programme, Collège International de Philosophie, Paris (Ciph); Programmer for Art &

Curatorial Practice, New Centre for Research and Practice; Visiting Research Fellow, Kings College London.

Gilles Massot is an artist and historian who held over fifty exhibitions and published the book *Bintant Phoenix of the Malay Archipelago*. He lived forty years in Singapore, teaching in Lasalle College of the Arts and Nanyang Technological University and now cultivates his garden in his French hometown Gardanne.

Roman Meinhold is Associate Professor of Philosophy, teaching Environmental Philosophy, Business Ethics & Sustainability and other Ethics and Sustainability courses at Mahidol University's International College (MUIC). He is frequently invited to research, educational, governance and business contexts to share expertise regard to pivotal sustainability issues. Previously Roman taught at Assumption University of Thailand, the National University of Lesotho, and the University of Education Weingarten, Germany.

Wolfgang Muench is a media artist and arts educator. He holds the position of Dean, Learning, Teaching & Research at LASALLE College of the Arts, University of the Arts Singapore. His research is concerned with issues surrounding sociocultural and societal impacts and effects of media technology and human-computer interfaces.

Muindi Fanuel Muindi is a performance artist, philosopher, and poet, with Lacustrine Bantu roots in the Rift Forests of Eastern Congo and the Mara Wetlands in Tanzania. He is the author of six books of experimental poetry and prose.

Rumeli Mukherjee is currently a PhD Research Scholar at the Institute of Language Studies and Research, Kolkata-Jadavpur University, India. Her areas of interest include Environmental Humanities, Mythology, South Asian Studies, Critical Plant and Animal Studies. She is also a member of the Postcolonial South Asian Studies Association of the Global South (PSAGS).

Tom Nurmi is Associate Professor of English Literature and Culture at the Norwegian University of Science and Technology and the author of *Magnificent Decay: Melville & Ecology* (2020).

Simon Önnared is a PhD candidate in innovation management for resilient energy systems at Mälardalen University in Sweden. Simon teaches and applies trendspotting and scenario design, focusing mostly on energy futures. He does this using participatory and explorative approaches to explore what could be possible above what is expected to occur.

Matthew Pangborn is professor and chair of English at the University of Alabama at Birmingham. He has published articles on energy-humanities issues in literature and film in the *Journal of American Studies*, the *Journal of American Culture*, *Interdisciplinary Studies in Literature and Environment*, and a special issue of *Humanities on Energy Use and the Humanities*. His book, *Enlightenment Orientalism in the American Mind, 1770 –1807* (Routledge, 2018), examines the importance of the fictional early-republic accounts of Eastern narrators to American's figuration of their own energy ascent.

Iljoon Park is Professor at Wonkwang University in South Korea, who earned their Ph.D. from Drew University.

Liz Pavey MA SFHEA - Assistant Professor in Theatre & Performance at Northumbria University - is a dance artist/researcher whose work is informed by somatic practices and theories of embodiment. Liz recently completed the Deep Time Walk facilitator training. She is also a Shiatsu practitioner and business coach.

Sascia Pellegrini is a Composition and Integrated Arts Lecturer at The School of the Arts of Singapore, Board Editor for Film International Journal (UK), Editor for the Open Space Magazine (NY, US), and Advisor (Ma, PhD) for the Transart Institute (UK). His expertise is in media theory, phenomenology, and artistic practices, with a strong background in music composition and dance choreography.

Praba Pilar is a queer diasporic Colombian artist creating wildly interdisciplinary art projects focused on technologies of life, which have been featured in museums, galleries, universities, and festivals around the world. She has a PhD in Performance Studies, Co-Directs the Bioarts Ethical Advisory Kommission, teaches at California College of the Arts, and can be found at prabapilar.com

Verónica Policarpo is a human-animal scholar and Senior Research Fellow at the Institute of Social Sciences, University of Lisbon, where she currently coordinates the ERC Consolidator Grant ABIDE, to study how animals recover from disasters, in particular wildfires; the Human-Animal Studies Hub; and the post-graduate course Animals and Society.

Julia Pond is a dance artist and practice-based researcher. Her AHRC TECHNE funded PhD explores intersections of dance and political economy. She continues to make performance work with movement and text.

Philipp Quell, born in Germany, first studied mechanical engineering at TU Munich, followed by Performing Arts at University of Music and Performing Arts (MdW). His Master's thesis is titled 'Phenomenologie(s) of the One - is Aristotle que(e)r?' and he has published papers on aesthetics, political theory and ontology, edited a volume of Journal for Cultural and Religious Theory and founded with Adrian Fleisch et al. the philosophical forum Khora.

Duncan Robertson's practice revolves around the ideological malleability of language and biography. His performances feature collaged sounds, images, texts and voices from everyday experiences to create the surreal, humorous worlds.

Gabriel Prado Rodrigues is a PhD student in Philosophy at Rio de Janeiro State University. MA in Philosophy (2020) and BA (2017) in Philosophy. He is currently a visiting scholar at the California Institute of the Arts researching themes such as philosophy of difference, negativity, political ontology and accelerationism.

Maja Rup is a researcher and PhD student at the Faculty of Philosophy of the University of Warsaw. Her main research interests are in ethical problems of climate and environmental crisis from feminist new materialism and critical posthumanism perspective. Her current research focuses on analysing the ethics of renewable energy sources.

Terra Schwerin Rowe (she/her) is Associate Professor of Religion and Philosophy at the University of North Texas and author of *Of Modern Extraction: Of Modern Extraction: Experiments in Critical Petro-theologies* (Bloomsbury, T&T Clark, 2022) which charts a path for an energy humanities approach to religion and environment discourses, while making a case for the importance of religious studies in the energy humanities. She is founding co-chair of the Energy, Extraction, and Religion Seminar at the American Academy of Religion and member of the Petrocultures Research Group.

Jessica Saxby is a writer, researcher and translator based in Paris. She holds a PhD in Cultural Studies from Goldsmiths University of London and is a postdoctoral affiliate at the University of London Institute in Paris.

Justus Schäfer is an independent researcher, designer and educator situated in Rotterdam, Netherlands. He received his Master of Science in Architecture from TU Delft and has worked

in multiple design practices in Berlin and Rotterdam.

Kuai Shen is a multispecies artist. His practice-led research problematises knowledge models about invertebrates and non-humans using technology-based performances. He has a PhD from Deakin University Melbourne, a MA in Arts from the Media Arts Academy Cologne, and another MA in Game Design from Cologne's University of Applied Technology.

Andrés Saenz de Sicilia is Assistant Professor of Philosophy at Northeastern University London. His publications include *Subsumption in Kant, Hegel in Marx: From the Critique of Reason to the Critique of Society* (Brill 2024) and the edited volume *Marx & the Critique of Humanism* (forthcoming with Bloomsbury).

Amit Singh is currently Assistant Professor of English at Dr. B. R. Ambedkar University Delhi, India. He has received his Ph.D degree on Folksongs from Jawaharlal Nehru University, New Delhi, India. He has been recently awarded an ICSSR funded Major Project on Kumbh Mela Consciousness and its Folk Imagination.

Pedro Paulo Gomes da Silva is a leading member of the Akwê-Xerente Indigenous People of Brazil and actively lectures about pressing socio-cultural and environmental indigenous issues. Since 2023 he has been the regional coordinator, at the Araguaia unit in Tocantins, of the National Indigenous Foundation (FUNAI). His former role as chief of the Xerente Brigade Association (ABIX) offers a background on the situated, knowledge-making, fire practices of indigenous people. The ABIX combines bottom-up communitarian work with ancestral knowledges to prevent and manage forest fires in the Savannah territories that comprise the Funil and Xerente nations.

Lucas Surjus is a postgraduate philosophy student at UFU, a researcher at The New Centre for Research & Practice, and has previously been a student of UNESP, University of Coimbra and USP. His work has ranged from Spinozism to accelerationism, culminating in his current endeavour in energy transition and ontological turns.

Suzanne Thorpe is a sound artist and scholar. Her creative research couples critical listening with acoustic ecology, improvisation and technology, crafting immersive sound engagements that reveal dynamics between human cultures and nature's systems. She is Assistant Professor of Sound Studies at Manhattan University and Visiting Scholar at New York University.

Helena Wee is an artist, writer, creative coder, curator and PhD researcher at Birkbeck. She investigates algorithmic paradigms through speculative worlds. Teaching includes courses at Goldsmiths and Birkbeck. She's exhibited at The Courtauld Institute of Art, QUAD, V&A, Studio 3 Gallery, Watermans Arts Centre and Tate Modern. Her works in the BFI Archive and the Computer Arts Archive.

Sha Xin Wei, Professor at the Schools of Arts, Media + Engineering and Complex Adaptive Systems, directs the Synthesis Atelier for transversal art, philosophy and technology at ASU. Sha's research concerns processualist approaches to ontogenesis and poesis. Trained in mathematics, his art and scholarship range across gestural media, movement arts, responsive environments, and philosophy of technology.

Bart Welling is an associate professor of English at the University of North Florida, where I teach classes in environmental literature, ecocriticism, and the energy humanities, among more general literature and writing classes. My current book project is called *Resisting Energy: The Long Struggle Against Irresponsible Power*.

Ashley Woodward is Senior Lecturer in Philosophy at the University of Dundee. He is a

member of the Scottish Centre for Continental Philosophy and is an editor of *Parrhesia: A Journal of Critical Philosophy*. His book *Lyotard's Philosophy of Art* is forthcoming from Edinburgh University Press.

Finian Worrall completed his BA in 2018 at the University of Cape Town, South Africa in English Studies. He came to London in 2019 and joined the Centre for Research in Modern European Philosophy (CRMEP) where he completed an MPhil in Philosophy in 2021. Finian continued at the CRMEP to undertake his PhD entitled 'Against Ecology: Law, Ethics, and Activism on a Dynamic Planet'.

Shan (Shan Shan) Wu is a young scholar of ancient languages and theme-oriented studies at the intersection of philosophy of technology, history of science, and humanities, with an upcoming PhD defense in the history of religion, whose works on technology and religion has appeared in *Philosophy and Technology*, *Postmedieval* etc.

Prof. Daniel Wuebben holds a Ph.D. in Literature from the Graduate Center of the City University of New York. He is the author of *Power-lined: Electricity, Landscape, and the American Mind* (2019) and various peer reviewed journal articles on subjects ranging from surf break preservation, the aesthetics of transmission lines, and the rhetoric of Nikola Tesla. From 2020 to 2022 he held a Marie Curie Fellowship for WIRESEED 360, a project examining the rhetorical transmissions of the energy transition and he is currently Assistant Professor in Social Sciences and Humanities at Pontificia Comillas University in Madrid, Spain.

José Luís Zêzere is Professor (Full) of Physical Geography at the Institute of Geography and Spatial Planning, University of Lisbon, specialising in applied geomorphology, hazard assessment and risk analysis. Director of the Centre of Geographical Studies. Vice-president of the CERG European Centre on Geomorphological Hazards, European Council.

Marina Zurkow is a media artist invites people to explore ways of knowing and feeling nature-culture tensions and environmental messes. Using technologies (including software and food), she fosters intimate multispecies and geophysical connections. Zurkow works as a founding member of the collaborative initiatives *More&More* (Investing in Futures), *Dear Climate*, and *Climoji*.

Chairs and conference organisers

Natasha Lushetich is an interdisciplinary theorist with a background in the arts and Professor of Contemporary Art, Media & Theory at the University of Dundee. Her research focuses on intermedia; critical mediality; global art; the status of sensory experience in cultural knowledge; biopolitics; performativity and complexity. Natasha is the recipient of numerous fellowships such as Fulbright, Steim and ArtsLink; her research has been funded by the AHRC; Arts Council England; Maudsley Fund; The Amsterdam Fund for the Arts; The European Council; and VSB Foundation. Her last AHRC-funded research project is: *The Future of Indeterminacy: Datafication, Memory, Bio-Politics*. Natasha's books include: *Fluxus: The Practice of Non-Duality* (2014), *Interdisciplinary Performance* (2016), *The Aesthetics of Necropolitics* (2018), *Beyond Mind* (2019), *Big Data: A New Medium?* (2020), *Distributed Perception: Resonances and Axiologies*, co-edited with Iain Campbell (2021) and *Contingency and Plasticity in Everyday Technologies*, co-edited with Iain Campbell and Dominic Smith (2022).

Undine Sellbach is a philosopher, artist, and Senior Lecturer at the University of Dundee. Her research brings together philosophy, ethology, psychoanalysis, feminism, and performance

to rethink the entanglements of a more-than-human world. She has supervised PhD projects in the environmental arts and humanities, feminist and queer theory, the philosophy of science, performance philosophy and Wittgenstein studies. Recent research projects include the £1.4 m AHRC funded *InGAME*. She is co-editor of *The Edinburgh Companion to Animal Studies* (2018) and is currently completing a book on the ludic living philosophies of biologist Jakob von Uexküll. Alongside her academic writing she makes creative philosophy works including *The Floating Islands* (2006), *The Blind and Deaf Highway Woman* (2019) and *Prickly Pear Jam: a restorative that might turn* (2023).

Dominic Smith is Senior Lecturer in Philosophy at the University of Dundee, and one of the leading experts in the UK on Philosophy of Technology. Dominic has supervised multiple PhDs to completion across diverse areas including philosophy of technology and media, Deleuze, comparative philosophy, aesthetics, and philosophy of mind, and has contributed to funded research projects including the £1.4 m AHRC project *InGAME*. Dominic's latest book is *Exceptional Technologies: A Continental Philosophy of Technology*, and his current writing project involves thinking about how philosophy of technology can be broadened to speak to issues in philosophy of education, design, and creativity, with a focus on the work of Walter Benjamin. This book draws on impact and outreach work that Smith does as co-lead for the 'Localising Philosophy' project at Dundee.

Joel White is a philosopher based between France and the UK, and Postdoctoral Researcher at University of Dundee. He is executive editor of *Technophany*, *Journal of Philosophy and Technology* (Radboud University Press) and an Associate Lecturer in Philosophy at Staffordshire University. His research crosses between Modern European Philosophy and philosophy of media, science, and technology. He is currently looking into how 19th- and 20th century thermodynamics and information theory were received into philosophy and literature and how technoscientific concepts, including "energy," "entropy," and "information" have become philosophical concepts. He is also an active cinematographer and film colourist. His films, made in collaboration with artist and director Madison Bycroft, have been nominated and shown at Tate Modern, the Villa Medici Film Festival and the Anne Arbour film festival. He is also a translator of the French avant-garde, having published a book-length translation of surrealist poet Antonin Artaud's *Revolutionary Messages* (Methuen Drama) with Bloomsbury Academic.

Rowan Lear is an artist, writer and Postdoctoral Researcher at University of Dundee. Across interdisciplinary research and practice, Rowan engages with feminist new materialism, posthumanism and philosophies of embodiment, ecology, and indeterminacy. Colluding with photography, writing, vegetation, clay and other lively materials, Rowan traces the sticky and entangled histories of sensation, labour, agriculture, and ecology. Solo exhibitions include *a sudden branching*, Birmam Arts (2021) and *Adheres to the Tongue*, The Muted Horn, Cleveland, Ohio (2018); while group shows include *Grafting: The Land and the Artist*, London Art Fair (2024), *Why do it together when you can do it alone?*, Lewisham Arthouse (2019); and *Rising from the Hill*, NCAD, Dublin (2017). Since 2019, Rowan has cultivated Glasgow Seed Library at Centre for Contemporary Arts, Glasgow, currently co-organises *Un/Nature*, a queer ecologies reading group at Glasgow Zine Library, and is developing *The Sentient Garden*, a multispecies and multisensory commission at Forgan Arts Centre, Fife.