

Indeterminate Futures / The Future of Indeterminacy

International Transdisciplinary Conference
University of Dundee, Scotland
13 – 15 November 2020



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DAY 1

FRIDAY 13 NOVEMBER 2020

9:30 - 9:40

JOHN ROWAN
VICE-PRINCIPAL
RESEARCH AND
KNOWLEDGE EXCHANGE

WELCOME TO THE UNIVERSITY OF DUNDEE

9:40 - 10:00

NATASHA LUSHETICH
& IAIN CAMPBELL

**INDETERMINACY IN THE 2ND AND 3RD DECADES OF THE 21ST CENTURY
(INTRODUCTION TO THE CONFERENCE)**

PANEL 1A: PERSPECTIVES ON AND FROM PHYSICS

ADRIEN DE SUTTER

Goldsmiths, University of London

Dark Matter and the Indeterminacy of Existence

From astronomical bodies to fundamental particles, much of modern physics is occupied with the search for unseen objects. With such searches, however, comes uncertainty. It has been the general approach to treat this indeterminacy as a problem of knowledge – a question dealt with by the accuracy of experiments and the veracity of their theories. In contrast, I wish to argue that this indeterminacy is an integral feature of the problematic existence of the cosmos and its constituents. That is, a thoroughly existential indeterminacy that suggests that one speak not of the objects of existence as fixed solitary beings awaiting affirmation or denial, but instead as entities in process. In other words, beings that remain fundamentally incomplete, and that seek to enlist us in their greater realisation. Reflecting on the history of the dark matter problem and drawing on an ethnography with physicists, I consider the many efforts involved in permitting dark matter's 'entrance into the world'. As I show, the demands that dark matter places on those that work towards its realisation are significant, mobilising its human and nonhumans makers – changing them, forming them and potentially leaving them by the wayside when they falter in their task.

CRISTIAN MARIANI & GIULIANO TORRENGO

Institut Néel, CNRS, Grenoble; Autonomous University of Barcelona & State University of Milan

Metaphysics of Passage in Dynamical Reduction Models of Quantum Mechanics

The Dynamical Reduction Models (DRM) are among the main solutions to the measurement problem in quantum mechanics. DRM proposes to modify Schrödinger's evolution of standard quantum mechanics by adding a stochastic and non-linear element to the fundamental dynamical equation. By doing so, one can describe the collapse of the wave function as a real physical mechanism, without making reference to observers or to experimental apparatus. The collapses happen randomly and spontaneously with a certain probability rate per unit of time, a rate that is specified by the theory. The world of DRM is fundamentally indeterministic. Given this, many philosophers and physicists in the past decades have argued that in DRM the passage of time is not illusory, but is an objective feature of reality. In his recent book, Callender (2017) has extensively argued against the inference from DRM to the passage of time. Very roughly, he argues that indeterminism is not a guide to passage of time. Although we agree with this, in this paper we shall suggest that there is a genuine connection to further investigate between DRM and the metaphysics of passage, one that can be captured in terms of a view of the openness of the future which is Ockhamist in spirit. We will argue that DRM might entail the existence of indeterminate state of affairs, and that these might provide a ground for genuine passage. To do so, we will focus on the relativistic versions of DRM, in particular on Tumulka (2006), which we take to be the natural place to look at in the context of the metaphysics of time.

ASHLEY WOODWARD

University of Dundee

Tyche and Ananke

This paper will begin with an exploration of indeterminacy through a brief history of the paradigm shift in physics from deterministic models (represented by Ananke, Greek goddess of force, constraint, necessity) to probabilistic models (Tyche, Greek goddess of fortune and destiny). In modern philosophy (exemplified here by Kant), indeterminacy was privileged as a site for the preservation of human freedom, ethical responsibility, and creativity, against the prevailing deterministic sciences (Newton). As Norbert Weiner tells the story, deterministic sciences

PANEL 1A: PERSPECTIVES ON AND FROM PHYSICS

have been superseded by probabilistic sciences since the late nineteenth century, but 'from every point of view which has the slightest relation to morality or religion, the new mechanics is fully as mechanistic as the old' (Wiener, *Cybernetics*, p. 44). That is, in his words, 'Tyche is as relentless a mistress as Ananke' (p. 38). The paper will then explore how twentieth and twenty-first century philosophers, such as Raymond Ruyer and Bernard Stiegler, have attempted to defend fundamentally the same issues as philosophers such as Kant, but in relation to the new sciences of probability. The defence of the traditional philosophical stakes of indeterminacy in the new context of probability then becomes a task, in Stiegler's words, of 'programming the improbable.'

10:00 - 11:15 - CHAIR: NATASHA LUSHETICH

PANEL 1B: PROBABILITY AND AGENCY

DAVID ZEITLYN

University of Oxford

Schrodinger's Spider in the African Bush: Coping with Indeterminacy in the Framing of Questions to Mambila Spider Divination

Framing questions to Mambila spider divination in Cameroon, both clients and diviners flirt with determinacy but by and large avoid it, except when talking in the abstract to impertinent anthropologists or similar. In nggam du divination, binary questions are posed to a spider in a hole in the ground. The alternatives are associated with a stone and a stick placed near the hole, which is covered by marked leaf cards. After covering the area with a pot and waiting for the spider to emerge the pattern of the cards relative to stone and stick is interpreted to answer the question posed. Mambila divinatory practice includes repeated reformulations of question as problems and possible solutions are considered and refined. Hence divination provides a means to deal with or accommodate real world indeterminacy, providing paths to action, resolving some of the aporias of the instant with sanctioned advice: the spider says 'do this!' Life histories of sample individuals show that even some diviners either do not consult or do not follow the advice given. This puts a different interpretative frame on the determinacy that can be easily elicited. Mambila talk determinacy while walking cautiously, acting to implicitly maintain indeterminacy, keeping futures open!

LUKAS GRIEßL

University of Essex

Statistical Controversies and the Indeterminacy of Inference

Statistics and probability calculus aim to give a rational basis to our limits and borders of knowing. It aims to rationalize and cultivate the unknown, to tame chance, and forecast the future. Current methodological developments put much of the taken for granted assumptions of statistical inference into question. In this presentation, I will turn to a concrete current methodological debate regarding the advent of new methods of data gathering, which concern the core question of statistical inference, as to how inferences that extrapolate from a sample to the population are justified. The material particularly deals with debates on non-probability sampling, which is far from being a generally accepted method and evokes strong debates within the field of statistics. Based on this case, the presentation wants to explore questions surrounding the politics of representation and the ontology and epistemology of inference. The presentation will explore traditional and novel cultures of statistical inference as attempts to cultivate and rationalize the future and the unknown. In doing so, the presentation will contribute to the topic of indeterminate futures and the future of indeterminacy.

PANEL 1B: PROBABILITY AND AGENCY

MARTIN ZEILINGER

Abertay University

AI Art and Post-Anthropocentric Agency

What happens to 'agency,' anthropocentrically conceived, when the concept becomes diffracted across new kinds of posthumanist agential assemblages in AI art? Focusing on recent projects by Ann Ridler and Maja Smrekar, this paper explores how artistic uses of AI can both re-inscribe and disturb the traditionally unified, singular, and anthropocentric subject position of the humanist agent. Anna Ridler's *Mosaic Virus* (2018-19) references the historical 'tulip mania' phenomenon, in which a rare plant virus, affecting only certain flower bulbs, triggered intense financial speculation. Relying on artist-curated training data, Ridler links the presumptive unpredictability of generative AI to the perceived unknowability of viral matter, developing a metaphor for the decoupling of agency from the mastery of human hosts. Maja Smrekar's *!brute_force* (ongoing), by contrast, documents ludo-scientific experimental efforts to train an AI system on 'dog data.' In doing so, Smrekar redistributes and pluralises agency across the subject positions of the project participants, to produce new agential realities that are triangulated between the human, the algorithmic, and the canine. The two projects develop very different perspectives on the indeterminacy of anthropocentric notions of agency in and through AI. I will discuss these as successive steps towards the conceptualisation of agency as decentred, multiplicitous, indeterminable, and unbounded by anthropocentric ontological and ideological frameworks.

11:15 - 11:30 - BREAK

11:30 - 12: 45 - CHAIR: IAIN CAMPBELL

PANEL 2A: CYBERNETICS AND ENTROPY

DANIEL NEMENYI

King's College London

The Conflicting Determinations of Norbert Wiener and Leibniz

My paper will argue that prior to the formulation of the modern concept of information in 1948, Norbert Wiener had already employed it in a philosophical register by means of 'determination'. This argument will be articulated through a reading of a 1945 paper co-authored with the neurophysiologist Arturo Rosenblueth. Further, the roots of Wiener's concept of determination in Leibniz's Principle of Sufficient - or as in the Theodicy, Determinate - Reason shall be traced. Finally the divergent ethical stakes of determination with respect to benevolence, in Leibniz, and control, in Wiener, shall be outlined, such as to characterise the break in Wiener's cybernetics with any sense of a best of possible worlds. The compossibility of the world in cybernetics, I would argue, occurs through conflicts of determination.

PANEL 2A: CYBERNETICS AND ENTROPY

WOLFGANG MUENCH

LASALLE College of the Arts Singapore

Reconfiguring Reality: Indeterminacy in Times of Counter-Culture

The 1960s, a decade of social and political upheaval and change, introduced complex developments in art and communication technology that provided opportunities for artistic experimentation with concepts of audience participation and man-machine interaction. This paper presents a critical narrative of the emerging media-technological avant-garde art scene in the 1960s. It focuses on the gradual shift in approaches to presenting experimental works with machine-based interactivity and man-machine interfaces from the context of performance art into the 'white cube' of the art gallery. Countercultural art collectives endeavoured to implement Wiener's conceptual framework for cybernetics into their participatory artworks that created a 'social system unto itself' (Turner). These works questioned the dominant structural hierarchy of specific roles in artistic projects and provided new approaches to the indeterminate interdependencies between artist, audience and art environment. The paper examines the impact of this shift on notions of artistic authorship and the object character of interactive media artworks under the influence of cybernetic and system theoretical approaches. Drawing on an analysis of the 1960s experimental countercultural media artworks, the paper emphasises the relevance of concepts of indeterminacy in complex systems and the increasing relevance of concepts of emergent intelligence for the artists' fascination with digital technology.

JOEL WHITE

King's College London

The Determinacy of Heat Death Versus Life's Entropic Indeterminacy

The aim of this paper is to philosophically explore the thermodynamic notion of heat death as well as life's relation to the universal increase of entropy. The universal conclusions of entropy not only set 'time's arrow' forward, but give the universe, our sun, and the other energetic systems that life depends on, an 'end'. The future, thermodynamically speaking is, hence, determinate for life as it is for any of energetic systems. While life's ultimate fate is inevitable, life is also capable of locally decreasing its own internal entropy to maintain its homeostasis. In this sense it is negentropic. The consequences of this lowering of internal entropy nonetheless increase the entropy of its environment: the potential energy, or exergy, used to maintain life is exhausted for the future. This exhaustion cannot be recuperated; life is in this also sense generally entropic. Life's conditions of possibility, the consumption of exergy, are also its conditions of impossibility. Taking this into consideration, the paper will end by asking: to what extent can the universal increase in entropy become a principle of practical philosophy? Is it possible for life to be "efficient" in its consumption of exergy? Would this efficiency be worth living?

11:30 - 12:45 - CHAIR: NATASHA LUSHETICH

PANEL 2B: TRANSVERSAL ARCHITECTURES

STAVROS KOUSOULAS

Delft University of Technology

Synaptic Passages: Architectural Technicities and Margins of Indeterminacy

Synapses manage to capture both the passage of an intensity (as a synaptic moment) and the formation of an extensity (as a synaptic location). In other words, synapses can be understood as constraints and for this reason, as information; after all, information is nothing but the reduction of potentials. In this paper, I will examine how architecture, in its technicities, operates as a

synapse: how it allows for both the formation of an extensive space as well as for the very possibility of intuiting a space and a subject yet to individuate. To do so, I will focus on how architectural technicities, in their successive concretisation, allow for a certain degree of indeterminacy. As philosopher Gilbert Simondon points out, this margin of indeterminacy makes any technicity sensitive to outside information: if architecture transforms information into forms, it is by priming its technicities to affectively open up to the indeterminacy of a differential influx of intensities. In this sense, architecture will be understood as an intensive exercise on the indeterminate, on a figure that is not yet figured out, but does so on the basis of informational relays; or, in better terms, synaptic passages.

ANDREJ RADMAN

Delft University of Technology

Architectures of the Superfold: Unyoking Coherence from Congruence

If to think differently one has to feel differently, and if the sole purpose of design is to change us, then, according to Kwinter, architecture is effectively a 'psychotropic practice' that modulates and compels routines of experience. The recomposition of what Guattari refers to as 'architectural enunciation' profoundly transforms the role of the architect who becomes its relay by assuming the analytic and pragmatic responsibility for the production not merely of the built environment, but of subjectivation itself. While natural evolution exhibits the motive power alone, cultural involution exhibits the formative (onto)power. The former merely transfers extrinsically imposed (kinetic) constraints from substrate to substrate, while the latter generates intrinsic (normative) constraints that have a capacity to propagate and self-organise allopoietically. To embrace indeterminate futures / the future of indeterminacy is to part ways with the all-too-structuralist mereology - part-to-whole relationship - in favour of the conception of the open whole that is not of the parts, but alongside them. Drawing on Guattari's concept of 'transversality' and Haraway's 'sympoiesis', the paper promotes mereotopology as defined in terms of progressive constraint (mutation of boundary conditions). Interiority - understood qua the process of subjectivation - is conceivable only as reciprocally presupposed with the exterior.

XINYI XIE

Goldsmiths, University of London

Matrixial Architectures

Matrixial architectures is a practice-based investigation into space as a matrixial medium. How do architectural abstractions—reinforcing sight or touch boundaries—fail to account for multispecies encounters? Exploring how viruses disrupt borders of the "I" and "non-I," I ask if it's possible to conceptualise space as embedded in and breathed by holobiontic systems. Projecting Bracha Ettinger's "matrixial gaze" onto space, I elaborate in particular on ideas of "wit(h)nessing," "borderswerving," and "surpluses of fragility" in the context of the current epidemic. These concepts are applied to spatial case studies, questioning modes of building that frame material around discrete bodies or events, calling for greater rhythmanalysis. Understanding space as a matrixial material requires new forms of mapping and representation to de-centre contours and vision—opening up "frontiers of resonance" and "impossibilities of not sharing" in apprehending other entangled crises.

PANEL 3A: ENERGETICS AND TIME

CAT HOPE & LOUISE DEVENISH

Monash University

Performing the Digital Facilitation of Indeterminacy in the Percussion Works of Cat Hope

This paper examines how notation facilitates indeterminacy in four percussion works by Cat Hope: Broken Approach, Sub Aerial, Smoothing the Pillow of Dying Race and Tone Being. Hope's scores engage notational facilities enabled by digital presentation: including colour, animation and the integration of fixed media into score formats to develop and manage entanglements of electronic and acoustic materials. It is this nexus of graphic notation with precise digital design that creates a unique format for the unfolding of indeterminate conditions and the roles shared between score format, electronic delivery, reading and performance. The realisation of Hope's unique notation will be discussed via a taxonomy of indeterminate contributions, including representation and interpretation of timbre, duration, repetition and dynamics, and the interaction between fixed electronic and indeterminate acoustic material. The way indeterminate structures influence performative choices will also be examined. Framed within Hito Steyerl's concepts of 'participating in the image' Hope's works interrogate the role of the performer in respect to works presented via digital platforms, where composer choices collapse and collide in the performative moment.

HANNES SCHUMACHER

University of the Arts Berlin

How Long is Now? Or the Event of Chaos

The future is no longer seen as open. But before aligning ourselves to the mantra of the 'slow cancellation of the future' (Mark Fisher) we should firstly have a closer look at the present, now: for if we can show that the present is indeterminate, it will be an easy task to show that the future is indeterminate as well. The now is both a particular now - our contemporary present - and each now throughout history: the present now is thus unique. Unlike the future and the past, the now may not be reduced to statistics, probability or algorithms: according to a Sufi's saying it is the sword that cuts time into two. To counter the 'slow cancellation of the future' we thus must become aware that the doctrine of determinism merely holds for the past. Our political and artistic practice may be wholly unpredictable if we literally engage with autopoiesis, dynamic systems and feedback loops right at the edge of chaos, thus transferring an originally scientific concept to politics and arts. If understood precisely, the now is able to disrupt the pattern of determinacy through the unpredictable event of chaos. If the present now is open, the future is open too.

MATTHEW LOVETT

University of Gloucestershire

Making is Measuring: Indeterminate Musical Creativity as Topological Production

In Meeting the Universe Halfway, Karen Barad's analysis of the indeterminate nature of measurement suggests that it is impossible to make a measurement without impacting on the object being measured. Furthermore, Barad argues against the possibility of determinable objects per se. There are neither determinate objects to be measured, nor are there determined and bounded measuring devices with which to measure them. Whilst it remains the case that 'measurement' is not the same as 'making', the paper considers how - for the music practitioner -

PANEL 3A: ENERGETICS AND TIME

making, marking and measuring can exist on a continuum of production. Here, I draw on Barad's work to frame 'making-as-measuring' as an emergent, quantum-topological, perspective, and re-appraise processes of making and listening to music. In addition, following John Cage, I explore these themes by establishing a key difference between indetermination as a compositional or performative strategy and indetermination as a given condition within which all musical activity occurs. The paper concludes by problematising the idea that we can 'indetermine' music by means of aleatory or improvisatory strategies; instead suggesting that all music making is fundamentally bounded by an incapacity to be anything but indeterminate.

14:00 - 15:15 - CHAIR: IAIN CAMPBELL

PANEL 3B: PRECARIOUS ENTANGLEMENTS

ISLA COWAN

University of Glasgow

Theatre and Indeterminacy: A New Eco-Dramaturgy

Existing critical discussions of eco-dramaturgy, as defined by Theresa J. May, focus on the ways in which theatre consciously devises and stages relations between humans and nonhumans, as well as the significance of certain ecological plays to their historical moment of production. Yet, unlike literature, theatre is a collective art of iteration and difference, and play-texts always exist in dialogue with their imagined future performance. My alternative eco-dramaturgy acknowledges this dynamism, placing the play-text in a suspended temporality – or virtuality – in which the reader, as dramaturg, must collaborate with the playwright to draw out ecological resonances for a contemporary production. Pushing the boundaries of conventional eco-theatre criticism (Arons, Chaudhuri, Kershaw, May), my eco-dramaturgical methodology positions plays within multiple spatio-temporalities, allowing for both constancy and transformation: play-texts are given specific relevance in each new performance environment yet remain entangled with performances from the past and those yet to come. Drawing on the work of Derrida, Deleuze, Dimock and Barad, I will unearth the theoretical roots of this new eco-dramaturgy and explore its potential for practical application, exposing the ecology – and thus the indeterminacy – inherent in the way theatre operates: it always has to adapt itself to world beyond its originary moment.

DESIREE FOERSTER

University of Chicago

Experimental Environments and the Aesthetic Experience of Metabolic Processes

With the concept of an aesthetics of metabolism I want to propose an aesthetics that shifts our attention to how we experience, instead of focusing on objects. Media environments that manipulate temperature, air flow, or oxygen levels, can affect human subjects in a bodily as well as emotionally-affective manner, through intensifying processes that usually do not come to our attention. In taking the affectability of bodies through atmospheric surroundings into account, a new framework of thinking about subjectivity, and for imagining novel relations with others we are sharing our environment with, becomes possible. I propose that an aesthetics of metabolism 1) heightens our interoceptive sense and brings to the fore how internal processes of our bodies and emotional-affective registers change along processes in our external surroundings. And 2) that an aesthetics of metabolism heightens our sensitivity for minimal-affective processes in our surroundings, which might lead to a sense of being interrelated with the environment. This might lead to 3), the possibility to re-imagine phenomena we usually encounter in form of representations (such as climate).

PANEL 3B: PRECARIOUS ENTANGLEMENTS

MARCEL O'GORMAN & JENNIFER CLARY-LEMON

University of Waterloo

Swallowing Indeterminacy: Turning Otherwise towards Precarious Species in the Sixth Extinction

This project looks to the common barn swallow (*hirundo rustica*) as a case study in the precarious entanglement between humans and the many small, uncharismatic, nonhuman species that we put at risk in the epoch of the sixth extinction. We examine action plans legislated by the government that guide the building of indeterminate infrastructures—namely, artificial nesting kiosks that seem to confuse both humans and swallows alike. Although the barn swallow maintains a powerful presence in the cultural imaginary of myth (Procne and Philomela), poetry (Eliot's "Waste Land"), and even mathematics (Thom's Swallowtail Catastrophe), its physical presence on Earth has declined over 50% in the last 30 years (Brown and Brown, 2019). The precarity of swallow-human relations is conspicuously embodied in the legally-mandated artificial nesting structures that the birds seem to spurn (Campomizzi et al. 2019). This collaborative talk brings together photo-documentary and field site observation that reimagines the barn swallow mitigation structure. This multi-pronged approach suggests creative and playful pathways for turning differently—an alloio-strophic (strophos, bending/turning; alloio, otherwise/differently) inclination towards the more-than-human—while working through affects of loss through an intervention of eros-elpis, a sweetbitter hope for the future.

15:15 - 15:30 - BREAK

15:30 - 16:45 - CHAIR: NATASHA LUSHETICH

PANEL 4A: HUMAN-MACHINE ASSEMBLAGES

HADI MEHRPOUYA & AFSHIN MEHRPOUYA

Abertay University & HEC Paris

Re-assembling the Cyborg: An Exploration of the Analytical and Emancipatory Potential of Cyborg Diseases

Our existence is increasingly entangled with modern technology. As technologies evolve, our human-technology cyborgs are stuck in a cycle of reterritorialization and coding. The ailments of the technology and those of the human were our concern however; we ignored the diseases of cyborgs as a fluid ontology. In this paper, we aim to develop a pathological analysis of cyborgs. We conceptualise the diseases of cyborg as lines of flights that create windows of opportunity for de-stratifying and reterritorializing cyborg configurations. To do this, we use the case of 'Maladox', a speculative design work by one of the authors, investigating our entanglements with modern technology through a conceptual development of cyborg diseases. First, we discuss the role that the idea of sickness played in framing of human-technology interactions. Our focus is on how technology codifies our bodies (Svenaeus, 2013) and our ideas of self. We then extend Haraway's notion of cyborgs and reflect on its ailments from a Deleuzian perspective. We apply the notion of body-without organs to analyse 'Maladox' and further develop the notion of cyborg diseases. Finally, we expand on the critical/emancipatory potential of cyborg diseases as short-lived moments when a new cyborg ethics and reconfigurations can come about.

PANEL 4A: HUMAN-MACHINE ASSEMBLAGES

ANDREAS PIRCHNER

University of Music and Performing Arts, Institute of Electronic Music and Acoustics, Graz

Entangled Realities in Ergodic Musical VR-Performances

The talk investigates consequences of applying the posthumanist notion of performativity as a tool for understanding ergodic audiovisual compositions and performances which combine human performers, algorithmic agents, and spatial entanglements of virtual and physical realities. The reflections are exemplified on 'Terrain Study for Solo Violin and VR system' by Christof Ressi, where the setup of auditive and visible elements puts virtual reality into the context of a physical performance environment. By understanding agency as an activity and by referring to non-player characters of digital games like Drivatars as sedimented human activity/responsiveness, I argue that different forms of cyborgs emerge in the course of the performance. These are not hybrids of machine and organism but sedimented activity/responsiveness of human and virtual actors. The introduction of virtual space to the setup of ergodic audiovisual music performances and the resulting entanglement of rule-sets (physical and coded) causes material reconfigurations of the physical space and the performer. Consequently, the notion of entangled realities replaces the dichotomy of physical and virtual reality described in terms of a mixed reality scale.

KEVIN LAGRANDEUR

NYIT and the Institute for Ethics and Emerging Technology

21st Century Art, Emerging Technology, and Indeterminacy

Today's tools are complex and often smart enough to be capable of independent complex action, such that it can be hard to tell where the agency of the human ends and that of the tool begins. With regard to art, the tool itself may be a computer that makes decisions in conjunction with the artist or on his or her behalf. As a result, art in our posthuman age foregrounds the increasing indeterminacy of agency vis à vis humans and machines, as well as the indeterminacy of complex, emerging processes that are the products of human-machine collaboration. My presentation will explore and analyze this emerging 21st-century artistic phenomenon with regard to the advent of posthuman culture.

15:30 - 16:45 - CHAIR: IAIN CAMPBELL

PANEL 4B: PERCEPTIBILITIES

UNDINE SELLBACH

University of Dundee

Two Painted Flies: Improvised Arts of Perception in Uexküll's Picture Book of Invisible Worlds

Working with the illustrator Georg Kriszat, the biologist Jakob von Uexküll makes a water colour painting of a village street through the eye of a fly, reproduced in *A Foray into the Worlds of Animals and Humans* (1934). In the later essay, 'A Theory of Meaning' (1940), Uexküll describes a further fly painting. A young spider weaves a web which anticipates a fly - its movements, distinctions and blurriness - with such attention that is called a 'painted portrait.' The two painted eyes pull in very different ways - the first fly is playful, jarring, improvised, disassembling familiar viewpoints in a shifting 'mosaic'. The second is a 'technology of nature' which remembers and helps to transmit an ongoing evolutionary relation between spiders and flies. Yet across differences, there are resonances - tools and organs assemble to glimpse other worlds, perception becomes an act of distributed perception, noticing and obscurity entangle. This

paper will reflect on the indeterminate arts at play in Uexküll's philosophy of biology. At the same time, I hope to speak briefly to the future indeterminacy - which is now taking new pervasive, controlling forms - where both the arts of becoming otherwise, and the possibility of on-going-ness, cultivated in Uexküll's Picture Book biology, are at stake.

CHRISTINA JAUERNIK

Academy of Fine Arts, Vienna

Correspondences with Erratic Bodies

A critical reading of 'mediated intimacy' among virtual, engineered, machinic and other beings. A proximity of and diffusion with the technical/virtual, the mutual sharing of and caring for their surfaces, contours and boundaries. A technical infrastructure developed during the artistic research project INTRA SPACE (artistic research project funded by FWF/PEEK (AR299-G21) 2015-2017, a project led by Wolfgang Tschapeller, Academy of Fine Arts Vienna) for the meeting of human and engineered beings, serving as the rehearsal site for a shared physical practice. Considering a body that exists only in interaction with other bodies, and at any point could become another. How is this process of embodiment altering one's position of being in and seeing the world? How does a mode of perception that is constructed, erratic, and, most importantly, shared, transform living, moving, and speaking with each other? INTRA SPACE is an experimental zone, set up to explore diaphanous relations across virtual figures, humans, technical equipment and machines. INTRA SPACE can be read as a spatial transposition of the theoretical concept of 'intra-action' (Barad 2003). INTRA SPACE accommodates instability and indeterminacy as a dynamic, experimental framework. It allows for critical looks at the potentials of both the digital and the human to mutually enhance their functionality, their exposure in artificial and real spaces, their social interaction, their self-perception and knowledge.

BECCA ROSE GLOWACKI

Goldsmiths, University of London

Learning on the Edges: Exploring Methods for Technofeminist Literacies in Nonformal Contexts

Navigating the contradictions, precarity, and complexity of Indeterminacy from an educational perspective requires particular set of pedagogical approaches. For example, the kinds of data literacies that are needed to navigate information ontologies and platform capitalism in these precarious times require reflection and critical reimagining of our relationships to and with technology. Teaching technology is no longer in the hands of the technologists. In order to develop network, data or coding literacies, educators are turning towards teaching and learning with both technical knowledge, and ontologies of technology. Drawing from my experience in designing DIY workshops in community contexts I have identified a set of practices that bring together radical pedagogies and technofeminist perspectives. Together these make up what I call a 'Learning on the Edges', they are nonformal ways of learning about technologies that explore notions of matter, dynamic change, and plurality.

16:45 - 17:30: BREAK

17: 30 - 18: 30 - CHAIR: NATASHA LUSHETICH

KEYNOTE 1:

Gregory Cajete, University of New Mexico & Leroy Little Bear, University of Lethbridge

DEVELOPING RESONANCE WITH THE SKY SPIRITS OF THE COSMOS: FLUX AND NATIVE ASTRONOMY

Indigenous cultures cultivated a resonance with the cosmos, the stars, the sun, moon, and all the entities in the night sky, which they considered to be their relatives. Native American astronomy embodies the essence of Indigenous science. It reflects on cosmology, the creation of the earth, and the evolution of human beings approaching the stars with imagination as well as with observation skills and astronomical technologies. Native astronomies are predicated on four orientations: relationship, imagination, participation, and resonance. Native cultures applied imaginative participatory consciousness to the conception of the heavens, their goal being to establish a personal and collective resonance between the entities perceived in the night sky and their activities on Earth. Reflecting the mindset of the cultures they came from Native astronomies used creative ways to transfer knowledge through stories, ritual, art, symbolic architecture, ceramics, song, dance, and communal ceremonies. Indigenous peoples actively attempted to establish a deep communion with their 'star relatives', expressed through social organisation and traditional forms of education. Ultimately, Native astronomies helped to make sense of Native life and relationships by reaffirming the belief in the interdependence of all entities in an animate and Living Universe.

18: 30 - 19: 00 - CHAIR: NATASHA LUSHETICH

KEYNOTE 1 + 1:

Karen Barad, University of California, Santa Cruz

IN/DETERMINACY

TBC

DAY 2

SATURDAY 14 NOVEMBER 2020

PANEL 5A: UNCERTAINTIES AND IRREVERSIBILITIES

PEETER MÜÜRSEPP

Tallinn University of Technology

Irreversibility and Uncertainty: Revisiting Prigogine in the Digital Age

In late 20th century, Ilya Prigogine developed a new approach to scientific research. Different key terms, like nonlinearity and indeterminacy, characterise it. My claim is that the core of Prigogine's approach is actually irreversibility. In the course of studying the dissipative structures, Prigogine observed that we have to treat irreversibility not as a subjective attitude based on sense perception but rather as an objective theoretical fact. The methodological innovations of Prigogine enable to bring all natural science, including life sciences as well as social sciences into the framework of science proper. The idea of the irreversible flow of processes with possible dramatic changes of direction while moving through strongly non-equilibrium conditions has to be reinterpreted in the digital context. Even strongly technologically aided processes cannot make our physical world a reversible one. No corrections in the strict sense are possible. We don't know in advance when a new opportunity will open up. This is the uncertainty we are committed to face. There cannot be such a thing as technologically over-determined future. However, fortunately, future is not fully precarious either. Although in a limited range, correct predictions are still possible.

GI TAEK RYOO

Chungbuk National University Korea

Quantum Poetics: Robert Frost and the Nature of Uncertainty

The poetry of Robert Frost presents a reality much like the one that was being explored by quantum physics. His poetry illuminates the essentially indecisive and probabilistic nature of reality rather than human limitation or inevitable humanistic manipulation of reality. The adequate understanding of such phenomena therefore requires both ontological and epistemological vistas, which has been implicated in Frost's poetics and poetry. This paper proposes that Frost's poetry is certain in uncertainty as it reveals the poet's authentic experience of uncertainty found deeply both in nature and in himself. The principle of complementarity was developed by Bohr in order to account for the uncertainty of quantum systems and to describe comprehensively, but without classical contradiction, their conflicting aspects. Frost's poems may provide analogies that we can carry over from our everyday classical experience into the world of the quantum mechanics. Robert Frost is the poet who was able to find a means of expressing the conflicting quantum aspects of uncertainty in our everyday classical language, the task that, according to Bohr, is to be completed perhaps only by a poet, not by describing facts but by 'creating images and establishing mental connections'.

OLGA A. MOSKVITINA

Russian Academy of Education

A Psychologist's View of the Human Path from Chaos through Order to Uncertainty

In psychology, uncertainty is a prerequisite for decision-making in the decision-making theory (Kornilova 2015); it is associated with loss of identity (Erikson 1959; Horney 1950) or with experience in extreme situations (Vasilyuk 1984) or with a condition of creativity (Rogers 1994). The combination of peculiarities in a situation of uncertainty and personal characteristics of an individual results in different responses to that situation, such as dealing with it as a problem (Matyushkin 2017) or a situation with an unknown variable (Dorozhkin & Sokolova 2015) or a situation of frustration (Lvova et al 2016) or randomness and unpredictability (Taleb 2009). With the emergence of virtual reality and digital technology, the concept of 'uncertainty' has acquired a different meaning. The first generates fear driven by a lack of control, while the second deprives humans of the ability to demonstrate their active creativity; and together they

PANEL 5A: UNCERTAINTIES AND IRREVERSIBILITIES

deprive humans of their capacity as independent persons as they evolve into dependent persons. The order created by standardisation and digitalisation is a dubious attempt to make the world manageable (Chomsky 2013). In this ordered and soulless world, humans are increasingly feeling uncertain, lost and depressed (Spitzer 2014). They perceive total digital order as total digital chaos.

10:00 - 11:15 - CHAIR: IAIN CAMPBELL

PANEL 5B: PLASTICITY

STEPHEN DOUGHERTY

Agder University

Plasticity's Indeterminacy: Catherine Malabou on the Brain, Temporality and Change

For my conference presentation I would like to talk about the French philosopher Catherine Malabou's adventures in plasticity. I think that Malabou's presence in a conference on indeterminacy is vital, in part because of how her work contributes to, and complicates, retheorisations of materiality, and the relation between mind and body. The connection between mind and body is very much at issue in Malabou's ongoing, and evolving, project of insinuating the concept of plasticity into the warp and woof of the modern philosophical tradition, in books on Hegel (The Future of Hegel), Kant (Before Tomorrow), Freud (The New Wounded), Bergson, Piaget and Dewey (Morphing Intelligence). As I would like to discuss, her writings on plasticity thus bear very much also on temporality, or our thinking of the future, and the physical makeup of the brain as 'the cultural organ, the space of interaction of the biological and symbolic' (Morphing 58), where time is forged through the materialities of neuroplasticity, synaptic connectivity, and 'selection and stabilization by epigenesis' (Morphing 63). I envision my contribution as affording conference-goers an opportunity for comparison between Malabou's work and other nexuses of creative, interdisciplinary ferment around the subjects of temporality, change, and the brain.

LINDA ALOYSIUS

Central St. Martins, University of London

New Model Army and Morphological Activism: Material and Sculptural Indeterminacy For Combatting Embodied Screened Oppression

The paper relates: a. Joanne Garde-Hansen's work on the relationship between collective memory and the digital (Hansen 2011) to my invention of the term 'screened oppression' for describing the negative effects on embodied subjects of the dissemination of the capitalist patriarchal gaze via fragmented and flattened images passed through multiple, increasingly de-materialised digital screens; b. Catherine Malabou's work on brain plasticity / the adaptability of the brain / 'neuroplasticity' (2006) in relation to my use of the term 'invisible labour', for describing the concealed work of bearing the psychological and practical burden of ongoing screened oppression. In so doing, the paper draws from Hito Steyerl's illumination of the obfuscated connections between art institutions and (cyber) defence (2019) and Luce Irigaray's interest in "morphology in place of anatomy" in relation to the 'dynamics of material systems' to assert the feminist significance of the above for opening a discussion of the devastating effects of screened oppression, as a form of invisible labour imposed unequally classed and gendered subjects.

PANEL 5B: PLASTICITY

AMÉLIE BERGER SORARUFF

University of Dundee

Stiegler and Malabou on the Politics of Design: Cultivating an Aesthetic of Technology

This paper questions the correlation between the design of technologies and the process of individuation. To do so, I will look at Bernard Stiegler's political defense of the technologies of care in the age of disruptive technologies on one hand, and Catherine Malabou's research on the plasticity of the brain on the other. While Stiegler's work is known for focusing on the impact of technologies on the human's body, he often leaves aside or minimizes the role of the brain in the constitution of identity. Malabou, for her part, does offer a more extensive account of the neurological in relation to the development of self, but does so often at the expense of the body. However, her account of plasticity acknowledges the very importance of design in the formation of knowledge and it is on this point (but not only) that her approach should be brought together with Stiegler's. This paper concludes that in order to imagine an aesthetics of the self and a politics of care, one must pay a close attention to the very aesthetics of technologies, that is, there design.

11:15 - 11:30 BREAK

11:30 - 12:45 - CHAIR: NATASHA LUSHETICH

PANEL 6A: INDETERMINATE AFFECTS

JERNEJ MARKELJ

Cardiff University

Indeterminate Futures, Paranoid Temporalities

My paper explores temporal dimensions of paranoia, a libidinal tendency that Deleuze and Guattari link to the organising operations of power. In their view, paranoia should be seen as an inclination to impose order on the world that is in constant flux: it seeks to establish physical and conceptual borders, and police them. The paranoid relation to temporality is, therefore, characterised by an opposition to change, minimisation of chance, and elimination of uncertainty. As the disruptive forces of global capitalism escalate, and the future, further dislocated by a global pandemic, becomes increasingly uncertain, paranoia intensifies and tries to get a grip. I begin to analyse these rampant paranoid temporalities by engaging with Nietzsche's claim that the formation of humanity consisted of the breeding of an animal that is in control of its future. My examination of paranoia's complex relation to temporality proceeds via Eve Sedgwick, who suggests that this relation 'burrows both backwards and forwards'. Drawing on Sedgwick, I claim that the paranoiac seeks to be in control of both, the past and the future. Finally, I draw on Nietzsche's figure of the dice throw to consider a more affirmative relation to time, chance, and change.

PANEL 6A: INDETERMINATE AFFECTS

MANTRA MUKIM

University of Warwick

The Exhaustion of Future: Beckett and Derrida

My paper explores temporal dimensions of paranoia, a libidinal tendency that Deleuze and Guattari link to the organising operations of power. In their view, paranoia should be seen as an inclination to impose order on the world that is in constant flux: it seeks to establish physical and conceptual borders, and police them. The paranoid relation to temporality is, therefore, characterised by an opposition to change, minimisation of chance, and elimination of uncertainty. As the disruptive forces of global capitalism escalate, and the future, further dislocated by a global pandemic, becomes increasingly uncertain, paranoia intensifies and tries to get a grip. I begin to analyse these rampant paranoid temporalities by engaging with Nietzsche's claim that the formation of humanity consisted of the breeding of an animal that is in control of its future. My examination of paranoia's complex relation to temporality proceeds via Eve Sedgwick, who suggests that this relation 'burrows both backwards and forwards'. Drawing on Sedgwick, I claim that the paranoid seeks to be in control of both, the past and the future. Finally, I draw on Nietzsche's figure of the dice throw to consider a more affirmative relation to time, chance, and change.

GEORGIA PERKINS

Goldsmiths, University of London

Dizzying Swamp Protocols and Con-fusing Indeterminacy

How can dizziness, both as a method and state, con-fuse the notion of indeterminacy? For Ruth Anderwald and Leonhard Grond, to con-fuse is to 'make all that seems clear and definite fuse, blend, become unfinished, unstable, and impermanent.' Dizziness, shakes and destabilizes the 'normative assumptions and perceptions' of clear-cut binaries between certainties/uncertainties, convergences/divergences and life/death. The in-betweenness of indeterminacy disrupts oriented navigation and dominant modes of knowledge production and, instead, gives rise to the unexpectedness and ambiguity of disorientation and reorientation, forming a catalyst for change. The paper will use the film *Swamp Protocol* (2019) created by the mixed reality biome, art platform and transitional ecosystem - Most Dismal Swamp - to 'navigate this unknown'. The film depicts a polyphonic assemblage of murky, fragmented images of blasted landscapes, of the ocean, forests, and nightclubs. The only constant in the film is a scintillating, simulated, and fleshy starfish which breathes in the corner of a room. Wading through the hallucinatory dreamscape, this paper argues that dizziness con-fuses the 'sticky' and indeterminate entanglement of multiple spaces and times, and dis/re-orientates the viscosity of non/mattering.

11:30 - 12:45 - CHAIR: IAIN CAMPBELL

PANEL 6B: SHIFTING SUBJECTIVITIES

HADI MEHRPOUYA & DOMINIC SMITH

Abertay University & University of Dundee

There's Rue for You, and Here's Some for Me

Here, we explore the notions of streams and streaming; processes such as datafication, new time space configurations and their effects on us and our bodies through tragedies of Hamlet and Narcissus. The stratification of time and experience contributed towards overcoding of self-identity and self-awareness, imagination, un/consciousness, perceptions and the

PANEL 6B: SHIFTING SUBJECTIVITIES

expectations of individuals. Capitalist processes of double articulation from one side codified our senses through unification of time and experience. From the other side, a second articulation transformed time and space into a new flow of digital streaming through reterritorialisation of time-space topologies by intensifying data streams. Streams are a 'set of operations that regulate space-time through the cybernetic feedback loop'. Loop and feedback loops are one of the most common exercises of power. We start by examining the important epistemic role tragedies can play in-forming our understanding of our entanglements with technology. We then discuss streams and their effects by revisiting the experiences of Ophelia and her body in the stream, its conscious and unconsciousness state, pain and her death. Second, we mobilize the tragedy of Narcissus and draw comparisons between biological and digital ontologies of streams and suggest techniques to 'trouble the waters of' / challenge existing digital streams.

LILLY MARKAKI

Royal Holloway, University of London

Notes Towards an Erotics of Indeterminacy

'[T]he world is not formed of solid substance, since there is an admixture of void in things...' – Lucretius, On the Nature of Things. *'In reality, life is no more made of physico-chemical elements than a curve is composed of straight lines'* – Bergson, Creative Evolution

My paper seeks to address indeterminacy as an ontological premise and an ethics, or erotics of life. Offering a reading of Marcel Duchamp's 3 Standard Stoppages (1913-4) that draws from all ancient atomism, Deleuze's Bergson, Bachelard's philosophy of science as a "philosophy of No," and Elie Ayache's 'absolute contingency', the first part of my paper consider indeterminacy's link to a radical form of potentiality that implodes the logic of possibility and its confinement in mathematical probability. I then move on to show how the affirmation of indeterminacy as radical possibility (always infused with a touch of irony) undermines 'substantial' conceptions of subjectivity, to embrace a queer mode of being and sociality that privilege spontaneous, eventual micro-and macro-formations, showing every present, whether collective or individual, to be a site of contestation, where past and future meet to negotiate.

MIJKE VAN DER DRIFT

Royal College of Art

The Materials of Social Change: Towards a Pluriversal Trans Ethics

In this paper I will present an argument for a material understanding of trans ethics. I will use Aristotle's model in conjunction with Serres' reading of Lucretius de rerum natura to support a material understanding of practical philosophy in which ensouled matter shifts over time to change collective forms of being. The ancient conception of time suggests that it falls over the head from behind the agent, which means that practical and thus ethical navigation is always indeterminate as one aim directly at stable categories, such as 'virtues' or norms. While Aristotle's philosophy notoriously required the agent direct itself to the forms of life of the classical polis, Serres dynamism leaves this dominating form behind. An indeterminate ethics allows links with pluriversal epistemologies and multilogical approaches. In these approaches ethics does not aspire to a single form, but accommodates different logics and forms of life. Pluriversal ethics requires lateral shifts between logics (Lugones 1987) that hold space for collective social change Arturo Escobar (2020). Such an indeterminate ethics which is dynamic in nature undergirds a specifically trans ethics. A trans ethics enables dissolution of hegemonic forms and replaces these with anarchic solidarities (Bey 2020).

12:45 - 13:30: LUNCH

KEYNOTE 2:

Franco Berardi, Independent Scholar

FREEDOM, A PHILOSOPHICAL FAKE: THE VIRUS, (IN)DETERMINATION, TECHNO-DETERMINISM AND THE PROBLEM OF FREE WILL

The rhetoric of freedom is based on a misunderstanding. In this talk, I question the philosophical background of the rhetoric of freedom in the modern age and the exploitation of the concept of freedom by economic libertarians who have devastated social life in the last four decades. I will outline the philosophical genesis of the false concept of freedom and of the paradoxes that this fake produces in the real world, referring to the history of the concept, based on modern history and its contemporary exhaustion in order to elucidate its philosophical ambiguities and the ensuing political manipulation.

PANEL 7A: DATIFICATION

ERICA DELUCHI

Goldsmiths, University of London

Technological Re(form)ulations of Land/Nature Market Ontologies

As the physical world becomes increasingly entangled with the virtual, market ontologies of land/Nature begin to engender a deeply structural indeterminacy. By focussing on the infrastructure of technological instruments that materialises and institutionalises these ontologies, I will present a working model that attempts to spatialise emergent and existing markets and the products circulating therein. This is to locate extractive sites and their calculi: the manipulation of space and time as data to generate capital out of the flow of information. The model is an attempt to begin de-standardising what the object of property in land is (land as commodity), and what the properties of land/Nature are (ie. minerals) - or rather, what both could become amidst changing landscapes and contemporary market conditions. Using Australia as the region of focus, I will interrogate some of the ongoing technological reformulations of land transfer, registration and representation procedures across the country by examining the close relationship between the ontological status vis-à-vis extractive calculus imposed onto land/Nature by contemporary markets against methodological processes employed during the Australian settler colonial project.

FRANZISKA PILLING & HAIDER AKMAL

Lancaster University

Researching and Designing Uncanny AI to Legible AI

The sociotechnical landscape has become more reliant on artificial intelligence (AI) operating via the Internet of Things (IoT). Technology is typically designed to ease users' interactions, consequently concealing functionality, leading to various misconceptions regarding AI and how data is processed (Pilling and Coulton, 2019). However, obscuring functions and the

PANEL 7A: DATIFICATION

incognito collection of data is profitable for companies (Bryson and Winfield, 2017; Mosco, 2014). Though, this intrusion of technology is questioned by users, concerning the security, privacy and the unknown implications of use (Bostrom, 2014; Bridle, 2018). Labelling AI as uncanny and illegible to users, either purposefully or as a result of AI's unintelligible coded decision logic (Burrell, 2016). Using a Research through Design methodology, we attempt to make AI operations legible through iconography (Lindley et al., 2020; Pilling et al., 2020). We are currently gathering research through workshops, enabling us to test the rigour and disrupt the current iteration of iconography to provoke further iterations. The participants of the workshop complete game-like tasks using cards, which depict the icons and their associated text labels separately, as a medium to engage—in a tangible manner—the intangible and functions of these technologies. We have already had success in participants using with ease our initial iconography system, while also highlighting and exposing icons of interest; which are worth further research and discussion.

JENNIFER GRADECKI

Northeastern University

By Any Metaphor Necessary: Artistic Counterpoints of the Surveillance State

This presentation will juxtapose the beliefs of intelligence analysts with those of several contemporary dataveillance artists to contrast their conceptions of data and information. While intelligence analysts often conceive of data as raw traces that can be assembled into a mosaic, relying on narrowly positivist epistemological approaches, dataveillance artists remain aware of the constructed nature of data and the impact of representation while breaking down positivist distinctions by integrating critical reflection into their interdisciplinary practices. Intelligence analysts' metaphors focus on information overload (haystacks, the sea, a flood), isolation (silos, stovepipes), and assembly (puzzles, connect the dots, mosaics). The most impactful metaphor, the informational mosaic, has led to mass surveillance, information overload, and a reliance on Big Data analytics to find hidden meaning. Artists investigating the surveillance state provide alternative metaphors that facilitate consideration of the social construction of facts, taking the form of image construction, assembling forms, deconstructing forms, occupying existing forms, and composing narratives. Out of the practices of dataveillance artists emerges a multiplicity of concurrent definitions and metaphors of data and information, as well as theories of ontology and epistemology, which can facilitate a nuanced understanding of a world that is complex, indeterminate, and in flux.

15:00 - 16:15 - CHAIR: IAIN CAMPBELL

PANEL 7B: ACCELERATION, CRISIS, CATASTROPHE

FILIP VOSTAL

Institute of Philosophy of the Czech Academy of Sciences

The Great Acceleration: A 'Deflationary' View

We are told that contemporary capitalist modernity is out of temporal bounds; that human agents are not only passive victims of structural mega-forces of ultra-fast modernity unable to intervene to the workings of the social world., Such observations are often couched in terms of the temporal incompatibilities between different temporal orders - e.g. by highlighting the tension between organic biological rhythms of human life and that of the global capitalist economy. I argue, however, that the processes of acceleration, dynamisation and intensification of social life affect different social actors in different ways and impact on psychological and biological constitution of human life in multiple, ambiguous and often contradictory ways. This paper will raise "deflationary" polemical notes (Osborne 2004) focusing primarily on the overwhelmingness, novelty and apparently catastrophic outlook that are often integral to the

assumptions associated with fast modernity. I will argue that various pathologies characterizing “accelerating society” are unequally distributed, manifest themselves diversely rather than uniformly, depending on a given social setting and other sociological variables. Human agents are in various, however limited, ways capable of negotiating, processing and managing the temporal pressures inherent to the logics and logistics of contemporary capitalism. The paper pleads for more fine-grained, situated ethnographically-driven precision when identifying the most vulnerable social sites, actors, processes and provenances prone to acceleration imperative and ‘will-to-speed’.

INGRID M. HOOFD

Utrecht University

The (Un)determined University? On the Limitless Limits of Academic Research

The university, some claim, has irrevocably strayed from its idealistic pursuit of knowledge and truth towards a neoliberal machine, in which over-production engenders innovative inertia. In this paper, I suggest that this paradox between acceleration and inertia, is not so much due to academic neo-liberalisation, but instead signals a reversal of the principle of causality. This points towards the essentially aporetic logic of the ideals of academic research since its inception. I suggest that the contemporary acceleration of this aporia by way of cybernetic tools has led to a situation in which not just the humanities but especially also the so-called hard sciences start to deconstruct themselves. I substantiate this argument by reading Jacques Derrida’s *Psyche* together with Werner Heisenberg’s *Physics and Philosophy*, pointing out that Heisenberg’s defence of an uncertainty principle in quantum physics marks the return of the auto-immunity of the university project of knowledge-gathering and its embodiment in the empirical sciences’ conception of subject versus object. I therefore posit that Heisenberg’s interpretation is symptomatic of the nuclear age not merely in terms of providing theories for destructive weaponry, but also because the form of his argument resembles and destroys the possibility to erase uncertainty via the accumulation of knowledge.

TEELIN LUCERO

Emory University

Cartographies of Catastrophe

We often think of catastrophe as global and totalizing, as that which lies on the other side of a precipice. While there is good reason to anticipate continued, unprecedented, and highly visible collapse and crisis, there is nothing new or newly imminent about this situation. Futural projects that originate from colonial epistemology depict catastrophe as a shift from stability into crisis and as the onset of unprecedented precarity and indeterminacy. Alternative epistemologies and metaphysical schemas that emerge from Indigenous and colonized experiences demonstrate that the anticipated precarity feared from the future has been lived through and remains to be lived within. The multiple temporalities and metaphysical frameworks that are pre and post apocalyptic coexist in messy tension and violent encounter. Their coexistence shows that we already live in a space of indeterminacy, where the future is past, catastrophe is both anticipated and built upon, and our world is already ruptured beyond repair, while simultaneously moving forward along the march of progress. The space of indeterminacy that contains conflicting temporalities is, crucially, a space. Unsettling the hegemonic univocity of these spatial configurations and their accompanying temporal and catastrophic narratives invigorates modes of territorialisation that offer options beyond the geopolitical map of sovereign states.

16:15 - 16:30: BREAK

PANEL 8A: ALGORITHMIC POLITICS

ALESJA SERADA

University of Vaasa

The Historical Determinism of Blockchain (and Its Limits)

Records on blockchain are immutable. Transactions in blockchain-based electronic networks cannot be cancelled, reversed or 'expunged' (Lapointe and Fishbane 2019, 53-54). Due to this, blockchain technology becomes the ultimate 'de-Terminator': the history of every token is directly projected into its future, based on its 'digital fate' and reputation. This 'historical determinism' becomes even more important, as blockchain tokens also stand for natural persons in many upcoming projects for 'digital identity'. Technically, blockchain platforms enable democratic decision-making and game-theoretic incentives for ethical behavior, which makes it a suitable technology for 'algorithmic governmentality' (Rouvroy 2013). This approach originated in the early 'cypherpunk' ideology of the first blockchain developers and adopters. There is a dark space of indeterminacy underneath blockchains based on a proof-of-work protocol, and this is the mining space. The reward for mining the next Bitcoin is random (Nakamoto 2008), and public blockchain platforms are also gambling platforms by design (Kraft 2019). However, commercial and governmental (Dutch Blockchain Coalition 2020) blockchain projects implement a proof-of-stake protocol that does not require mining. Consensus is achieved by the mutual agreement of designated authorities or 'trustworthy' users. This brings trusted intermediaries back into the equation, which signifies the end of the crypto Utopia.

DEREK CURRY

Northeastern University

Artistic Defamiliarization in the Age of Neural Networks

Algorithmically generated artworks often use predictive algorithms and stochastic processes that were initially developed for applications in finance, the military, and marketing. In their intended applications, these algorithms are used to manage risk in stock portfolios, simulate military strategies, bankruptcy prediction, or to predict consumer behaviour. In these scenarios, misclassifications or false-positives could have disastrous consequences. The fact that these algorithms often tend to be highly accurate in a controlled setting or narrow application may provide users with an undeserved confidence that the algorithm will perform with the same accuracy outside the scope of the training data. Predictive algorithms are also commonplace in consumer products and are used for image and facial recognition, object detection in self-driving cars, language translation, and product recommendations, allowing them to feel familiar and safe. The recent availability of high-end graphics processing units (GPU) and open source code has made these algorithms accessible to artists who have used them to generate new images or text, occasionally with the intent of critiquing the technologies they are based on. When used by artists, the results can reveal the indeterminate nature of these algorithms, and possibly raise questions about the efficacy, and potential dangers, of their initial applications.

STEPHANIE POLSKY

Goldsmiths, University of London

Aspirational Theft: Technocapitalism, Cognitive Augmentation Devices and Algorithmic Coloniality

This presentation will look at a series of proposed devices to cognitively augment humans encouraging us to cede ground to a new type of authority which is digital in kind. These technologies represent powerful tools through which to further colonise the human imagination; one made operational through algorithmic channels that offer the tantalising prospect of a seamless interface between the human and machine, all while they subtly asset strip our world and our being. By changing the way people communicate with one another, these

PANEL 8A: ALGORITHMIC POLITICS

technologies enable a discreet gateway for digital information to enter into what is most native to human being. This is an economic strategy ultimately bent on silencing the user, insofar as it relies upon the wearer to allow themselves to subsequently be interpreted by machine intelligence and thus, internally vocalised in what amounts to a fundamentally altered social environment. This same logic eventuates the destruction of sociality itself, a category evacuated in favour of effortless and private human-machine communication primed to capture and mine imagination by profoundly exploiting connection and translating it into machine language in order to enable multi-sensory conversion of the human to near total reliance on a technological apparatus that is intrinsically draining off its neurophysiology, and likewise, its stores of freedom and autonomy.

16:30 - 17:45 - CHAIR: IAIN CAMPBELL

PANEL 8B: FUTURITY

VALENTIN V. BALANOVSKIY

Immanuel Kant Baltic Federal University

Acausality as a Principle for Indeterminate Future: Carl Gustav Jung and Nikolay Lossky on the Acausal Connecting Principle

Swiss psychiatrist Carl Jung and Russian religious philosopher Nikolay Lossky proposed a new approach of studying everything from psyche to quantum. Despite of belonging to different philosophical traditions Jung and Lossky concluded that everything in the Universe connected by fundamental acausal principle. This principle one cannot describe by means of classical spatial-temporal paradigm. Jung called such a principle 'synchronicity', Lossky – 'gnoseological coordination'. According to Jung, synchronicity is a modern interpretation of the ancient idea of sympathy, which most consistently represented in Leibniz's doctrine of the pre-established harmony. The key parameters of synchronicity are spaceless and timeless, because the psyche relativizes space and time. Like Jung, Lossky relied on Leibniz's ideas. However, despite of the fact that the principle of gnoseological coordination also describes the acausal connecting principle, its character is somewhat different from synchronicity – gnoseological coordination characterizes as a super-spatial and super-temporal connection. These differences are because Jung largely based on Kant's transcendentalism and took into account the difference between thing-in-itself and phenomena, while Lossky consistently stood on intuitivism.

CHRISTIAN SCHWINGHAMMER

University of Potsdam

A Future Felt in the Present? On the In/actuality of What is Yet to Come

Determining Our predictive condition (Hansen 2015), Mark Hansen proclaims that 'the future is felt in the present' (121). A statement that echoes a currently widespread theoretical tendency: to place the future as an ontological feature of the present, i.e., as a future that arises out of the world's material textures and its indefinite depths of becoming. Here, the future is grounded as a matter of indeterminate potentialities that can never be lived as such, that are only revealed by technological means, but that nevertheless insist inexhaustibly in more-than-human existences. This contribution aims to scrutinize such an investment in futural matters as it appears both in theoretical landscapes and in finely tuned control visions for securing, altering, or intervening in lived futures in precarious times. In reference to Karen Barad's recent more-than-scientific, indeed messianically and kabbalistically nuanced discussion of futurity (Barad 2017), I will reconsider the future's back and forth between potentiality and actuality, between the realm of presence and what may elude it, between what is and what is yet to come.

PANEL 8B: FUTURITY

DYLAN VAUGHAN

University of Western Ontario

Indeterminate and Indifferent: Lyotard's Late Speculations

Between his theorization of the postmodern and his recuperation of the Kantian, Jean-François Lyotard was, like many of his contemporaries, a stalwart guardian of the indeterminate. Being little read now, however, not only has Lyotard's contribution to thinking the indeterminate been sterilized as a mere curiosity within the history of philosophy, but also the shift in his later works has been sorely overlooked. In the latter, the appeal to difference gives way to a lexicon that is alien to the post-structuralist milieu: the absolute nature of presence. Does this shift in thinking lose sight of the indeterminate, or does it commence its re-grounding? Following this question, my paper will interrogate Lyotard's sporadic usage of the concept 'tautegory'. Borrowed from late Schelling, Lyotard often employs this term within a Kantian context, as a purely idealist fragment lodged within the edifice of the transcendental architectonic. My paper will argue that Lyotard's use of tautegory constitutes a re-writing of his older, disavowed libidinal writing in order to re-think the nature of the indeterminate. By bringing together the conceptual schema of presence, tautegory, and identity, Lyotard's later thinking ultimately strives to underscore the ineliminable dimension of indifference that inheres in every event.

17:45 - 18:00: BREAK

18:00 - 19:00 - CHAIR: IAIN CAMPBELL

KEYNOTE 3:

Sha Xin Wei, Arizona State University

INDETERMINACY AND ONTOGENESIS

The indeterminate is more than the unpredictable – after all classical chaotic systems are deterministic, more than the infinite, and as Jackson Pollock argued with a drunken flick of the wrist, more than the random. But rather than define indeterminacy, let's consider how ever-evolving world exceeds every pre-given measure or category, and how experience exceeds every expectation. Yet experience helps: we feel our way into ever-proliferating experience the way that vines feel their way into the crevices of weathering brick. So how should we not only affirm un altro mondo è possibile / another world is possible, but experimentally vary the conditions of some ontogenetic processes that co-articulate our world?

DAY 3

SUNDAY 15 NOVEMBER 2020

PANEL 9A: ALEATORIC PROCEDURES AND INSTRUMENTS

CLARE LESSER

New York University, Abu Dhabi

Deconstruction and Indeterminacy: Radio as Aleatoric Instrument in the Works of Karlheinz Stockhausen

Between 1963 and 1970, Karlheinz Stockhausen (1928-2007) composed eight works involving radio, either punching holes in a pre-existing schematic or driving that schematic forwards through spontaneous, transformative possibilities. Radio foregrounds spatial and temporal instability and undecidability, while wresting agency out of the hands of both performer(s) and composer, unsettling notions of authorship, centres and presence, foregrounding play and allowing chance to take its chance. In *Specters of Marx* (1993/94) Jacques Derrida states: 'to haunt does not mean to be present.' A powerful statement that resonates with the domain of radio, for, as medium, radio unsettles presence by overturning the binary oppositions of space and time. The supposedly 'live' radio event brings forth the 'voices of the dead' and the distant in a simulacrum of the living and present; radio operates in multiple loci simultaneously and signals can be lost; they can be overlaid with the non-place and non-time of static where the listener is plunged into a sense of aporia filled with auditory hallucinations. In this paper I will address how the medium of radio brings together Stockhausen - figurehead of high modernism, and Derrida (1930-2004) - post-structuralist philosopher, in a meeting of indeterminacy and undecidability, where time is truly 'out of joint.'

MARTIN PATRICK

Massey University

Iconoclastic and Irreverent (Buddhist-inflected) Simplicity in Fluxus Performance and Artworks

Owing to a wildly variegated community of artists and scholars with an allegiance to Fluxus, almost everyone has their own vision of this non-movement. To some it is hyper-organisational, to others driven by its objects, others orient it around key artists. There exists no singular, determinate, and accurate theorisation of Fluxus, simply many competing narratives. This opens a trap door for the scholar, as the meanings of the words inscribed end up as indeterminate as the works themselves. The emphasis then shifts toward the reader-viewer/spectator-participant: it's (y)our problem now. Fluxus either brought the everyday into art, or art into the everyday. But its concentration on quotidian phenomena initiated a profound undoing of art. But perhaps the very open-endedness of Fluxus has led toward interest in its reconsideration in light of non-art phenomena, whether spiritual, philosophical, or sociological. The Fluxus considered here involves a dispersed network of diverse artists with a history of anarchic performances and absurdist artworks. I focus here on ways these aspects relate to strands of Buddhist philosophy running through many projects, among them those of Nam June Paik, Robert Filliou, Alison Knowles, and Geoff Hendricks.

RADEK PRZEDPEŁSKI

Trinity College Dublin

Stochastics, Topology, Emanuel de Witte': Cosmotechanical Indeterminacy in Marek Konieczny's Neo-Avant-Garde Intermedia (1962 – ∞)

The paper examines indeterminacy in neo-avant-garde practices of Marek Konieczny (b. 1936), a Warsaw-based structural engineer-turned-artist. Konieczny's practice spanned Fluxus-type instruction-based pieces, conceptual 'mental' operations, performance and body art, experimental film and traditional artisanal technologies. Konieczny's ongoing artistic experiments will be considered in terms of Markovian stochastics he perceived variously as (1) the property of memorylessness, (2) pure chance or (3) semi-random chains. Konieczny's turn to stochastics understood as semi-random chains coincided with Think Crazy, his 1974 intermedial strategy which produces chance artworks but proceeds through a certain productive constraint. Crazily

PANEL 9A: ALEATORIC PROCEDURES AND INSTRUMENTS

enough, Think Crazy finds this vector of deterritorialisation in seventeenth-century Delft architectural painting (Emanuel de Witte and Pieter Jansz. Saenredam) and hybrid Baroque art of the Polish-Lithuanian Commonwealth part influenced by Islamic art. Konieczny conceives his artistic process in terms of 'the topology of Think Crazy'. Concluding an interview I held with him in 2015, Konieczny said 'please remember [what is at stake in my practice is]: stochastics, topology, Emanuel de Witte'. After a preliminary survey of Think Crazy, the paper will contextualise Konieczny's treatment of indeterminacy within the Simondon-inflected framework of Deleuze and Guattari, and the recent interventions of Janae Scholtz and Stephen Zepke.

10:00 - 11:15 - CHAIR: IAIN CAMPBELL

PANEL 9B: VISUAL TEMPORALITIES

KRISTUPAS SABOLIUS

Vilnius University

Beyond Determination and Adaptation: Imagination as a Function of Life

In *Imagination and Invention* (2008, *Imagination et invention*), based on lectures given in Sorbonne between 1965 and 1966, Gilbert Simondon embarks on suggesting a new and poorly analyzed theory of the genetic cycle of images, consisting of four (or rather 3 + 1) key phases: (1) Anticipation, (2) Perception, (3) Recollection-Symbolization and (4) Invention. Employing the analysis of biological functions of organism, Simondon proposes to conceive the very first phase - anticipation - as a tool to question the idea of mere adaptation (omnipresent in various evolutionary theories) that determines the interaction between organism and its milieu. I will try to show that Simondon's theory provides the tools to interpret imagination as to be discovered within material and biological functions of every living being, not necessarily human and to conceive organism-milieu correlation as not fully determined interaction. The associated milieu can be described not only as a self-regulating environment that belongs to organism, but should be conceived within the potentiality of inventive imagination. Hence, imagination appears as a function of life.

SASCIA PELLEGRINI

The School of the Arts, Singapore

Determinate-Indeterminacy: The Flux of Time-Film. A Comparison Between the Work of Andrey Tarkovsky and Ingmar Bergman

This paper is investigating the configuration of time-events in Andrey Tarkovsky's *Solaris* and Ingmar Bergman's *Persona* : I will argue that time-configuration (the time of the maker) and time-perception (the time of the observer) is substantially different and that this difference is inherently related to divergent modalities of how time passes in the two films. *Solaris* implies time which is elliptical and directional: it develops a horizontal axis with plenty of elisions and recurrences. *Persona* acts on a vertical time pinned to an instant which reverberates and elongates in the depth of a spaceless moment. While *Solaris* creates loopholes within the linearity of events, in *Persona* there are no events moving the story forward but a relationship of doubles intensified by being anchored in stasis. Time in Bergman is not moving forward, nor backward as in *Solaris* , but rather upward and downward: an axis of horizontal and vertical time that generates a halo of dichotomic indeterminacy, a kaleidoscopic denouement of the particular cinematic logic of the two directors. A determinate-indeterminacy is the foundation of time-image in *Solaris* and *Persona* : a time eradicated from the physical time, a spiral time revolving onto itself which creates gaps, perceptual short-circuits in a temporal vacuum.

PANEL 9B: VISUAL TEMPORALITIES

MITRA AZAR

Aarhus University

(Dis)orientation and Centre of Indetermination

This presentation moves towards an understanding of the intertwining of the notion of orientation and that of the Point of View (POV) in the philosophy of Deleuze and Guattari. The POV sits between the actual and the virtual; it is a site of inflection where the centre of envelopment becomes a site of implication and expression of indetermination. The presentation claims that the centre of indetermination is characterised by indeterminacy because POV expresses indeterminacy by constituting itself as a membrane between the actual and the virtual. The membrane allows indeterminacy to filter from the virtual into the actual, and the POV manages to express the virtual, disoriented and eccentric indeterminacy in an actual and determined centre, which, nonetheless, preserves a degree of indeterminacy. On one side of the membrane, the POV functions as a site of expression of a centre of indetermination; on the other side, it functions as a site of inflection for a centre of envelopment. The constitution of the membrane occurs through the activities of the POVs. The POV allows indeterminacy to filter through and contribute to the constitution of a centre of indetermination as an eccentric center, always on the edge of (dis)orientation.

11:15 - 11:30 BREAK

11:30 - 12:45 - CHAIR: NATASHA LUSHETICH

PANEL 10A: CULTURAL MEMORY

GARY CHARLES

University of Birmingham

Potentiality ≠ Probability

In music composition, machine learning approaches have created the ability of instant recall in music and musicality from all past periods, now. Flat, instant archival access, combined with democratisation of generative means creates a sense of over-abundance, or unending flow. My research project aims to contextualise this perceived endlessness, re-focusing on the unheard. Music is often held out as the frontier of machinic creativity. However, these assertions and experiments treat music as a settled, quantified object, embedded in Eurocentric notions of its dimensions, with ossified categories, universally accepted transcription and reception. These conceptual leaps render music calculable, determined, and susceptible to simulation - negating cultural memory, the excavation of the novel, the 'yet to be determined'. What is overlooked is constant drift and shift, moving shadows, undreamt actions, the invisible processes that underpin cultural production. Shifts negate models, highlighting flaws and fictions - what Pasquinelli and Joler (2020) call The Undetection Of The New. In my research, I highlight resistant forms; aspects of music that present themselves as problematic to the algorithmic gaze. Potentiality, not probability. While grounded in a practice of experimentation, my project presents as a critique of both technological solutionism and market-led practices within the field.

MAYU IIDA

Goldsmiths, University of London

The Ghosts of the Atomic Past, Present and Future, and the Afterlives of Ephemeral Memory Objects

This paper is a follow-up of my PhD research on the roles of the digital archive in articulating the memory and knowledge about the Fukushima nuclear disaster that took place on 11 March, 2011. My research project originally focused on the production of “haunted data” and ghost stories, or the stories concerning exclusions and invisibilities in the practices of digitally archiving the ongoing disaster. I look further into the weird temporalities that emerge after my unexpected encounter with several disaster-related objects distributed across time and space, whereby I explore different modes of haunting in relation to a nuclear event that is itself inextricable from the notion of indeterminacy in the first place. This paper is also a critical and speculative attempt to dis/entangle different times of crisis, as I will reflect on the eerie resonance of the global pandemic of Covid-19 with the aftermath of the Fukushima disaster. It appears that the ongoing disaster has been subsumed and incorporated into a bigger picture of global catastrophe, reshaping the indeterminacy of the event in an uncanny way. Accordingly, I ask a question as to how the ghostly echoes and afterlives of disparate events in the recent past would open up and/or confine our capacity to envisage possible futures-yet-to-come.

ZAINAB ALIYU

New York University

Opele: Death as a Moment of Radical Continuity

The eight-shelled Opele (Yorùbá – Nigeria) is an apparatus for divination through collective memory. It has a binary implementation not unlike the computer byte: a single unit of machine memory that contains 8-bits and can store 256 different values (0-255). Computer memory, with its limited storage and manufactured scarcity, was designed to make way for new information. The divination chain, however, has boundless potential. It extends from a physical mechanism into a field of ritualised practice. The conceptual-aesthetic symmetry of two seemingly unrelated objects – core rope memory from early software computing and the Opele divination chain – begs the question: if cultural value systems are encoded in the objects we build, then what idea(l)s are embedded in today’s ubiquitous technologies? During the Apollo spacecraft mission, women workers manually wove memory into computer systems, based on translating software programmed by MIT engineers. These women’s contributions, like those of my ancestors, remain untold. Embodied human-machine interactions are often reduced to a universal system of binary digits and fail to account for uncomputable aspects. The ephemerality of memory dictates that ideas are never remembered in the same manner twice; hardening the bioprocesses of human memory into simplified computer storage dismisses the convoluted dichotomy of things digital versus things analogue. Our bodies are archives of memory that cannot be overwritten, despite technological attempts to render them as such.

PANEL 10B: RULES OF THE GAME

LUCIANA GALLIANO

Independent Scholar

'People are still looking for definitions, but...'

The title is a line of John Cage's *Diary: How to Improve the World (You Will Only Make Matters Worse)*. Indeterminacy in music is tied to John Cage, who in 1951 composed for (and with) David Tudor the ground-breaking indeterminate *Music of Changes*. In 1950-51, he wrote many pieces using the Chinese millennial classic *I Ching (Book of Changes)* to randomly organize the musical material; in *Music of Changes* the process had become incredibly complex and rigorous (Pritchett 1993). In the early 1950s the idea of alea in the composing process land at Darmstadt Summer Courses, where the composers were facing the aporias of extended seriality (Iddon 2013). Among heated debates they responded to the challenge. If Cage's indeterminacy seems to be opposed to determinacy, decision, for Boulez and Stockhausen it seems opposed to control - notwithstanding it inevitably involves the loss of control on time flow (in despair of Boulez). Indeterminacy established new and sundry levels in the relationships among composer - opera - player but, as the listener did not detect the structure in the works of total seriality, s/he cannot detect the opening to chance in the interpretation of a piece: the resulting is still an authoritative order.

DOUG STARK

University of North Carolina, Chapel Hill

Bateson, Croquet, and Embracing Ludic Indeterminacy Through Computer Gaming

The paper first presents two historical paradigms for harnessing ludic indeterminacy: 1) the military implementation of games in order to ultimately manage contingency; 2) The artistic implementation of games to precipitate an openness to contingency. Secondly, the paper considers the place of the computer game amid these two paradigms addressing concerns that the cybernetic medium remains inextricable from 1) (Crogan) before discussing examples of game systems I argue precipitate a generative openness to contingency by virtue of the game/player feedback loop: so-called 'fumble-core' game *Sumotori Dreams* (2007) and games involving procedural generation. In doing so, I draw on Gregory Bateson's appraisal of Lewis Carroll's croquet match in *Alice*. *Sumotori Dreams* exemplifies the coupling of 'self-corrective systems' Bateson finds compelling about the croquet - e.g. Alice as player and flamingo as mallet - and the way it places the aleatory, ecological nature of action in relief (Steps 450). But the pre-programmed *Sumotori Dreams* begets contingency only from the player's perspective and the croquet match fascinates Bateson's because it produces a series of "meta-random" events - the system of game rules itself recursively constituted through contingent occurrences. I conclude by proposing that AI-driven game design suggests the possibility of automating this speculative rule-generation process.

DAVID COTTER

University of Cambridge

2020 Vision: Music, Indeterminacy, and Virtual Reality

This paper explores the work 'BREKEKEKEX' (for guitar, electronics, and virtual reality headset), touching on notions of creative collaboration, indeterminacy, and the future of music performance through virtual reality in the twenty-first century. The piece explores the interface between physical and virtual realities in the context of musical performance, developing Berkowitz's 'principles of virtual space-as-form', and exploring virtual environments as dynamic platforms for interpreting past repertoires in the present moment. Fragments of John Dowland's 'Flow My Tears' (1596) appear and disappear in a panoramic field around the performer, forcing embodied and indeterminate decision-making. Movement decides content (ie.

PANEL 10B: RULES OF THE GAME

the fragment of material the performer is looking at), but also context (ie. the process of reading the panoramic score affects the live electronics). Virtual reality allows existing repertoires to be (re)interpreted through innovative approaches, and offers literal and metaphorical opportunities for musicians to transcend genre boundaries, and enter ever-evolving contemporary performance contexts. Headsets function as fulcrums around which the multiple identities of composer, interpreter, improviser, musicologist, and performer can be interrogated (in myriad hybridised and simultaneous configurations) and consistently recombined (conceptually and experientially). The 'virtual worlds' of headsets are malleable environments in which familiar repertoires can be reinterpreted as aleatoric environments.

12:45 - 13:30: LUNCH

13: 30 - 14:30 - CHAIR: IAIN CAMPBELL

KEYNOTE 4: Vladimir Tasić, University of New Brunswick THE PASTS OF INDETERMINACY

In an increasingly mathematized world that is the framework of contemporary biopolitics – ‘governance by numbers’, ‘metrics’, trading algorithms, predictive AI systems (e.g., ‘predictive policing’), incessant production, consumption, and surveillance of a stream of digital communication, transmission, compression, encryption – it seems timely to take stock of the notion of determinism and to question its mathematical backdrop. Does a determinism as traditionally contemplated on the model of Newtonian physics or celestial mechanics withstand scrutiny on its own terms? Do some of the familiar critiques of an ideal of mechanism, loosely based on more recent science (e.g. nonlinear dynamics) yet lush in largely unexamined political subtext, present only a further and perhaps even more troubling appropriation of complex technical developments in science by the dominant ideology? Mathematics, as well as philosophy, should rise to these political challenges. Can this be done with the current delineation of territories known as academic disciplines, in an archipelago itself subject to ‘governance by numbers’?

14:30 - 15: 00 BREAK

PANEL 11A: TEXT, CONTEXT, SUBTEXT

JUNO HOAY-FERN OOI

University of Malaya

Death of the Author/Death of the Reader: Textual Indeterminacy in Kenji Siratori's Blood Electric

Our ontologizing through language is possible because we abide by shared narrative and linguistic rules, used to structure sequential combinations of words and symbols. In *Death of the Author*, Roland Barthes severs authorial intention from text and reader interpretation. Narrative meaning becomes liberated from the 'interpretative tyranny' of any singular ontologising, existing as a 'multi-dimensional space' from which myriad possible readings can be derived. Utilising the cut-up method, William Burroughs juxtaposed new combinations of familiar words against existing rules. Derivation of narrative meaning through Burroughs cut-up ontologising is unstable, 'Ears behind painting; use to writing', but multiplied. Working in the same tradition, Kenji Siratori uses an automated translation and cut-up programme for the digital generation of his texts. Unlike Burroughs' measured acts of destruction however, Siratori's excessive method of composition, involving countless unknown operations, fractures any remaining semblance of recognisable narrative and linguistic structure. Interpretation of Siratori's text, 'record the vital-icon+our chromosome form escape', because completely unmoored from combinatory rules familiar to us, becomes infinite, perpetually shifting, and impossible. Using Georges Bataille's notion of the informe, I explore the deontologising of narrative meaning in Siratori's experimental cyberpunk text *Blood Electric*, which renders the text inaccessible and unknowable to its reader.

HELEN PALMER

Technical University Vienna

Synvariance: Queer Defamiliarisation and the Axes of Language

In this paper I examine the spatiotemporal axes of language and how they can be deformed, constituting syntactical variation or what I call synvariance. The conventional axes underpinning structuralist linguistics are usually considered as that of the horizontal syntagmatic and vertical paradigmatic orders. The figures discussed in this paper queer both the syntactic line and the paradigmatic order of their material-discursive frameworks. Synvariance is a queering (or a defamiliarising) of both syntax and invariance, which is to say, a reorientation of both. This critique aims to overcome both dualisms and rigidity of categorisation or separability in favour of dynamic systems, which not only allow for movement within the system but require a constancy of movement for the working of that system. Using Roman Jakobson's theory of the poetic function I advance an argument powered by what I call pareidolic logic, tracing seemingly 'motivated' patterns in my own research journey which begins with a much-quoted line from Gertrude Stein. I engage with James Williams' 'zombie postcard game' and Armen Avanessian and Anke Hennig's 'metanoia' as recent examples of dynamic formalist systems. In conclusion I examine the ways in which the gender binary is materially-discursively queered in the work of performance artist Travis Alabanza and their show *Burgerz*, and finally through the splicing of words in 'Tender Bodies', poet Quinn Eades' rewriting of Stein's *Tender Buttons*.

MICHAEL GREER

CUNY

Reclaiming the Pejorative: Imaginable Futures and Socially Situated Knowledge

When it comes to reclamation, there seems to be a clear difference between some pejorative words and others. For example, the word 'queer' has been reclaimed to the extent that it is acceptable for it to be used by everyone - even straight people. Alternatively, some words, like racial slurs, resist such reclamation - white people ought never use them. And then there are

PANEL 11A: TEXT, CONTEXT, SUBTEXT

some words whose meanings are indeterminate... it is unclear what they are beginning to mean and who ought to use them. Take the word 'fat'; some activists are trying to reclaim its meaning so that it operates as a simple descriptor divested of moral weight, but some think that it simply is a pejorative word and feel hurt when it is used against them. Two questions surface from this conceptual landscape: What accounts for the differences between pejorative words when it comes to possibilities for 'full' reclamation? And what can this tell us about the future of previously pejorative words whose meanings are being contested? This paper will answer these questions by appealing to theories of socially situated knowledge and Stanley Cavell's theory of how words come to have new meanings (projection). I argue that pejorative words can only be fully reclaimed when the people against whom they are currently weaponised can actually imagine futures into which to project the new meaning(s).

15:00 - 16:15 - CHAIR: NATASHA LUSHETICH

PANEL 11B: COMPUTABILITIES

NANCY MAURO FLUDE & JO POLLITT

RMIT University and Edith Cowan University

Expanding Liminality: We Live Inside the Interstices of the World Located Between Folds of the Red Fibres

This performance lecture examines the interstitial as an analytical category, this perceptual shift builds on the liminal to serve as cosmographic balm and spatial salve. Many of us collaborate through a ballet of communication platforms on computational networks, folding into the interstices of the world. To provide deeper understandings of these corporeal futures we posit the interstitial as a fluid state that drags chaos to the surface. By scrutinising the inscription of inertia through act of 'writing as dancing' (Pollitt 2018), polyvalent logics, ephemeral sensibilities and intimate relational dwellings of interiority are foregrounded. Human and non-human agents are positioned as implicit and explicit dancing agents through kinetic experiments of and in the embodied annotations of chatbots masquerading as wayward actants in the texts of the wider public sphere (Mauro-Flude 2016). The dramaturgy of writing as dancing in the digital realm becomes a critical factor, repetition, hesitation, gaps and pauses in a reply, spatial composition of text or responses are often where a depth of understanding, sentiment and meaning reside. Advancing notions of indeterminacy - where an out of sync lag of a network is embraced in the same way practices of on the fly improvisation and somatic inconsistency are harnessed - unintended consequences are embraced.

EMIDDIO VASQUEZ

Arizona State University

Materialist Synthesis

Western tonality begins with a well known legend amongst both musicologists and mathematicians, which finds Pythagoras walking through an alley when he overhears the hammering of metal rods. He observes that even though the sound sources are disparate and discrete they nonetheless create a single consonance. After more experimentation with sound and the reductive idealization that take the form of the monochord, the core of Pythagorean metaphysics would form, and as Aristotle puts it, its followers came to the belief that 'things are the same as numbers'. This position will ultimately seep into the modern idea that nature can be modelled faithfully (enough). There is an important omission with regards to how many hammers were involved in the discovery of harmony in the Pythagoras legend, that Daniel Heller-Roazen, via Boethius, resuscitates in his book, *The Fifth Hammer*. It suffices to state that a fifth hammer was omitted on the grounds that it yielded a dissonance whenever the rod was struck in relation to the other four. This dissonance and its purposeful omission may have greater implications on

PANEL 11B: COMPUTABILITIES

the history of Western thought and traces, as I would like to argue, an unexpected link between matter, sound, computation and the digital. The Pythagoras legend may very well serve as an allegory for computation and it becomes critical for those who choose to uphold still a materialist position, new or not, especially when working with and through digital means.

ADEN EVENS

Dartmouth College

Computation and Contingency

Though some recent theorists (Fazi, Parisi, Hui) have argued that digital technologies, reputed to be deterministic and uncreative, nevertheless demonstrate an important and redemptive contingency in their behavior, my research suggests that our first impression is in fact correct: the digital squeezes out contingency, limiting and even eliminating it. Digital technologies—which have been enthusiastically and (mostly) uncritically welcomed, achieving a near hegemony across all domains of human endeavor (and around the globe)—benefit from ideological conditions that favor their adoption and disregard their lack of contingency. Moreover, those same technologies tend to reinforce the ideology that nurtures them, establishing a vicious circle that shuts out other ways of relating to the world and, in particular, devalues the vital role of contingency in a rich human life and as the basis of ontology more broadly. This presentation articulates the “digital” ideology, traces its historical origins and its almost irresistible appeal, demonstrates through technical analysis of digital technologies its inextricable association with those technologies, and discusses the incalculable risk of a world in which contingency has been technologically and ideologically minimized.

16:15 - 16:30 BREAK

16:30 - 17:45 - CHAIR: NATASHA LUSHETICH

PANEL 12A: LIMINALITY, AESTHETICS AND THE PRACTICE OF THEORY IN THE WORK OF DICK HIGGINS (CURATED PANEL AND PERFORMANCE)

PART I: OWEN SMITH

University of Maine

Seeking new Horizons with Dick Higgins, or how Blank Structures, Boredom and Danger can help us stop worrying about the virus and enjoy the cacophony of the unknown, the unforeseen and the indeterminate

By the early 1960s Cage’s ideas and work had formed the basis of a whole field of experimentation in the arts making use of indeterminacy in a variety of ways. Drawing on this history, these approaches and the resultant forms the Artist Dick Higgins emphasized three key methods through which the operation of indeterminacy could be engaged as an both a framing mechanism and as a functional means of creative engagement. The primary concerns of Higgins for engagement in indeterminacy can be seen in three important aspects of his thinking: First, the method of Blank Structures; second, the mode of Horizons central to the experience and understanding of the work; and third Danger and Boredom as a kind of methodology that both generates, and call for, indeterminacy itself. After briefly examining the historical explorations and uses of indeterminacy this paper will primarily focus on Dick Higgins investigations of indeterminacy in the context of Blank Structures, Horizons, and Danger and Boredom.

SIMON ANDERSON

Art Institute of Chicago

Fluxus cum clinamen

Dick Higgins' *Some Poetry Intermedia* illustrates the possibilities of indeterminate as well as intermedia theories of art. As well as offering a decade-after review of his application of Coleridge's term, the poster is itself an intermediary between drawing and text, between tendencies in poetry of the period, and between the near future and the classic past. Most striking is a large pink spiral—reflecting perhaps the *gidouille* symbol of Pere Ubu, the creation of Alfred Jarry. The whorl is centered on poetry, wrapped in metapoetries—poetry after, across and with poetry. Laid over the spiral, eight labelled red arrows explode across the field, their pointed heads aimed at different named disciplines ranging from mail art to music, with the strongest and longest ending in a corner of philosophy, whilst a broken arrow of an intermedium is embedded in the large arrowhead of the spiral, ending in anything. A black triangle hovers at the top of the field, exemplifying Higgins' notion of the happening as intermedium, while a short text at center left explains the idea in detail, and another at lower right offers homilies about the nature of poetry. My presentation will speak mostly to the arrow of concept poetry, and will discuss some of the strategies used by poets and artists—associated with Fluxus or not—who celebrated and rejected intermedia and indeterminacy, or both. Further, I will seek to locate some of these notions in the western philosophic tradition.

CRAIG SAPER

UMBC

Indeterminacy As/Of Intermedia

In his poster titled *Some Poetry Intermedia*, Dick Higgins offers a number of definitions of intermedia: 'Intermedia differ from mixed media in that they represent a fusion of the elements [...] opera is a mixed medium since the spectator can readily perceive the separation of the musical from the visual aspects of the work, and these two from the literary aspect'. For Higgins, it is 'pointless to try and describe the work according to its resolvable older media', the term intermedia describes 'art works [that] lie conceptually between two or more established media or traditional art disciplines'. A 1971 work by Fluxus artist Ken Friedman suggests these intermedia qualities: 'The distance from this page to your eye is my sculpture'. Not only does the work poke fun at the normal criteria for sculpture, it suggests a particularly important interaction with the spectator. It goes beyond a mere criticism of art to suggest a social network built on instructing people in various activities.

Part II: The use of indeterminacy can be most specifically seen in music/sound explorations in three elemental ways: (1) the use of random procedures in which the chance element is involved only in the process of composition and used to produce a determinate, fixed score, (2) mobile forms in which events are provided by the composer, but their production/arrangement is left to the determination of the performer, and (3) indeterminate notation, including graphic notation and texts in which the music is represented using symbols and illustrations suggesting how a work can be performed. The performance will use an indeterminate score from Higgins words/phrases to create an indeterminate performance of them as an alternative mode of presenting the same ideas considered in Part I.

PANEL 12B: RESILIENCE AND RESISTANCE

DOUGLAS BASFORD

University at Buffalo, SUNY

If we resilient: The Racial Politics of Neuroplasticity and Indeterminacy

Popular and scientific discourses about how the 'brain changes itself' subtly exclude nonwhites because of the entangled legacies of scientific and medical racism (Washington 2006, 2019) and localization orthodoxy, which pegged cognitive functions to fixed brain regions. 'Hacking the brain' through informed nutrition, cognitive exercises, and psychotropic drugs is now a cultural paradigm with racialized inflections. Ironically, psychology's 'WEIRD' problem—the reliance on primarily young, white, middle-class, cis-het college students as subjects (Henrich, Heine, and Norenzayan 2010)—effaces how foundational clinical cases indicating brain plasticity involved nonwhite patients (Doidge 2007; Ramachandran 2011). Due to the 'racial mattering' (Chen 2012) of neurotoxins such as lead, compounded by a consensus that damage from heavy metals is permanent only now being questioned, populations like those in Flint are prejudged as lacking neural dynamism and compelled to be uncomplainingly resilient in degraded, under-resourced environments. In tracing the relationship between indeterminacy and neuroplasticity, I explore 'resilience' and 'neuroplasticity' as rhetorical constructs applied disparately to different populations with different futures. I conclude with Sylvia Wynter's hope for a 'psychoexperiential' philosophy rooted in neurobiology that could supplant our immiserating collective behaviors with 'a dissonant, a non-identitarian, [...] comprehensive and planetary humanism' (Wynter 2001, 2003; Scott 2000).

ANTHONY GRITTEN

Royal Academy of Music

Indeterminacy in the 1970s: Cage meets Lyotard

This paper starts with, but extrapolates beyond, the two meetings of Cage and Lyotard in 1975 and 1976. Part 1 reconstructs a Cageian reading of Cage's *Child of Tree* (1975): (1) historically, modelling alternative situations of the human within, rather than against, the environmental; (2) technologically, nuancing the distinction between tools and machines and proposing experimental uses of 'musical' instruments; (3), materially, via the phenomenology of sonic practice, touch especially; (4) performatively, modelling a particular mode of energetic investment. Part 2 of this paper proposes a Lyotardian reading of *Child of Tree*: (1) resistance of natural materials to measurement and to the operator's aleatoric activities; (2) resistance of temporality to the operator's gestures; (3) resistance to cognitive purchase of the 'work' weakly determined by its 'score'; (4) resistance of energetic investment to stockpiling (a conventional assumption of aesthetic production). The two readings share assumptions about energy / entropy: not just that, pace Cage's score, 'There is no need for a great deal of activity', or that, as Lyotard wrote later, 'Brezhnev should have spent more time studying thermodynamics', but the slow dispersal of energy from the event into the surrounding universe. For Cage, 'Not one sound fears the silence that extinguishes it'; for Lyotard, the task was to tell 'the fabulous history of energy'.

DOMINIC SMITH

University of Dundee

Common Resilience: Philosophy of Technology as Future-Oriented Philosophy of Education

Networked technologies play a fundamental role across contemporary societies, and ought to be an urgent focus for the forms of clarificatory, critical, and creative thinking that good philosophical education fosters. This is especially true, this paper argues, in a contemporary situation where a sense of crisis itself has become our 'commons'. That is: where what is shared

PRESENTER BIOS:

Haider Ali Akmal is a Printmaker from Pakistan and PhD Design Candidate at Lancaster University, UK, exploring alternative practices towards the Design of IoT through Speculative and Ludic Design. Part of the PETRAS IoT Hub and Uncanny AI Projects at Imagination Lancaster, his PhD thesis explores the use of Object-Oriented Philosophy and Play mapping More-than-Human Design futures for AI through playful artefacts such as the Internet of Things Board Game and the Tarot of Things.

Zainab Aliyu ('Zai') is a Nigerian-American cultural worker, designer and artist based in NYC. Her transdisciplinary practice interrogates the cybernetic and temporal entanglement embedded within societal dynamics. She uses counternarrative interventions and infrastructures of care to catalyse resilience, resistance and hope. Zai is a graduate from Carnegie Mellon University. She has been an organiser with School for Poetic Computation and a member of Black Girl Magik; has spoken at Yale University, SXSW, Microsoft, University of Southern California and The Africa Center; and is a recipient of Carnegie Mellon's Lee Goldman Scholarship Award.

Linda Aloysius is a London based sculptor who completed her practice-led PhD at Goldsmiths College in 2018. She explores structures relating to marginalisation and exclusion, with a focus on the absence / absenting of artistic heritage of working-class women. Recent art and research presentations include at The Foundling Museum London (2021-upcoming), LSE with Goldsmiths College and City University (2020-upcoming), Tate Modern (2020), Credit-Suisse London (2019), Glasgow University with Girlhood Gang (2019), Durham University (2018), CSM (2018), MAAT Lisbon (2017). Publications include in 'Feminist Activisms and Artivisms', Netherlands: Valiz, (2020), 'Feminist Review, Issue 120, Currents' (2019), 'Museological Review, Issue 20: The Global Microphone' (2016) and 'Infallible, In Search of the Real George Eliot', Article Press (2005).

Simon Anderson is a British-born-and-educated cultural historian whose art-school exposure to fluxus helped to mold his career. He has worked at the School of the Art Institute of Chicago since 1993, teaching a range of seminars and lecture classes around twentieth-century art and anti-art. In addition to organizing exhibitions, designing, and producing publications, he has written exhibition commentaries, magazine criticism, and book chapters on Fluxus, Mail-art, expanded poetry, the Situationist International, and conceptual photography. He has lectured widely, and has acted as a gallery dealer in, private consultant on, and public speaker about the experimental arts and artifacts of the nineteen-sixties, seventies and eighties. Long an advocate of performance as a way of knowing, he continues to observe, arrange and perform the events of his life in a Fluxus mode.

Mitra Azar is an eclectic-nomadic video-squatter and ARTthropologist. For the last ten years, he has been investigating crisis areas, building an archive of site-specific works through the lens of visual art, filmmaking and performance. He is currently a PhD candidate at Aarhus University and part of the Geneve2020 think tank (Institute of Research and Innovation, Pompidou Centre, Paris). His theoretical and practice-based work has been shown at the Museum of the Moving Image New York; Spectacle Cinema NYC; the Havana Biennial; The Influencers; Fotomuseum Wintertur; The Venice Biennial; Transmediale Festival; Macba [Sonia] Podcast, and Berlinale Film Festival.

Valentin V. Balanovskiy, PhD in Philosophy (2011), LL.M (2019), is Leading Researcher at Immanuel Kant Baltic Federal University (Kaliningrad), chairman of the Kaliningrad Division of Russian Philosophical Society, member of the International Association for Spielrein Studies, and the author and host of popular-science radio shows.

Karen Barad is Professor of Feminist Studies, Philosophy, and History of Consciousness at the University of California at Santa Cruz. Barad's Ph.D. is in theoretical particle physics and quantum field theory. Barad 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, poststructuralist

theory, and feminist theory. Barad's research has been supported by the National Science Foundation, the Ford Foundation, the Hughes Foundation, the Irvine Foundation, the Mellon Foundation, and the National Endowment for the Humanities. Barad is the Co-Director of the Science & Justice Graduate Training Program at UCSC.

Douglas Basford is Assistant Director of Academic and Professional Writing at the University at Buffalo, State University of New York. He has received funding from the National Endowment for the Arts and the National Endowment for the Humanities. His work has appeared in *Artis Natura*, *Elizabeth Bishop* and the *Literary Archive*, *Metamorphoses*, *Multi-Ethnic Literatures of the United States*, *Poetry*, *SubStance*, *Western Humanities Review*, *Two Lines*, *Words without Borders*, and *Formes Poétiques Contemporaines*. He has degrees in literature, chemistry, and science writing from the University of Michigan and Johns Hopkins University and is completing his dissertation in the environmental humanities.

Franco 'Bifo' Berardi is a contemporary writer, media-theorist and media-activist. He founded the magazine *A/traverso* (1975-1981) and was one of the contributors to *Radio Alice*, the first free radio station in Italy (1976-1978). In the 1980s and 1990s he took part in the promotion of cyberculture. He has been a contributor to *Semiotexte* (New York), *Chimeres* (Paris), *Metropoli* (Rome) *Musica 80* (Milan), and *Archipelago* (Barcelona), among others. He has published books about social movements, art, and communication. Among his publications are *The Soul at Work* (2009) *Futurability* (2015) *Fenomenologia del fin* (2017), and *Breathing* (2018).

Gary Charles is an interdisciplinary artist and researcher, working across sound, moving image, installation, performance and conceptual practice. His work typically focuses on socio-political concerns, including looking at wealth inequality, hyper-individualism, spatial politics, and artificial intelligence. He also release music under a number of monikers, including releases as *The Static Hand* on *High Strung Young*. Recent artistic projects include *Mosquito Lightning*, a conceptual project (in collaboration with *Carla Busuttil*) dealing with the privatisation of policing, macho marketing and the otherworldliness of gated suburbs. The project has been shown as installation, fake TV advert and guerilla advertising campaign.

Jennifer Clary-Lemon is Associate Professor of English at the University of Waterloo. She is the author of *Planting the Anthropocene: Rhetorics of Natureculture and Cross Border Networks in Writing Studies*. Her research interests include environmental and material rhetorics, theories of affect, critical discourse studies, writing and location, and research methodologies. Her current research examines infrastructural entanglements of humans and nonhumans as material rhetorical arguments, focusing mandated recovery strategies for species at risk.

David Cotter is currently reading for his PhD in Music (*The Collaborative Guitar*), at the University of Cambridge under the supervision of Professor John Rink. He previously obtained an MPhil in Music Studies (Cantab, 2018) and BA in Music (Dunelm, 2016). In 2019 he gave a world-premiere during the EXPO2 Festival at the University of Oxford, built self-playing guitar robots in Norway, co-organised 'The Classical Musician in the 21st Century' conference at the University of Cambridge, gave lecture-recitals in Hong Kong and Portugal, presented papers in Belgium and England, and performed in Ireland, Malaysia, and Singapore.

Isla Cowan holds a degree in English Literature from the University of Cambridge and a Masters in Writing for Performance from the University of St. Andrews. She is currently pursuing a PhD, researching *Ecological Consciousness in Contemporary Scottish Theatre* at the University of Glasgow, with funding from the Arts and Humanities Research Council. Isla also works regularly as a playwright, director and performer, with recent performances at *The Scottish Storytelling Centre*, *Royal Lyceum*, *Assembly Roxy*, and *The Pleasance*.

Derek Curry is an artist-researcher whose work addresses spaces for intervention in automated decision making systems. His recent work has addressed automated decision-making processes used by automated stock trading systems and Open Source Intelligence gathering (OSINT). His artworks have replicated aspects of social media surveillance systems and communicated with algorithmic trading bots. Derek earned his MFA in *New Genres* from UCLA's Department of Art in 2010 and his PhD from the State University of New York at Buffalo in 2018. He is currently an Assistant Professor at Northeastern University in Boston.

Erica Deluchi is an Australian researcher and designer working at the intersection of design and politics. Currently a postgraduate researcher at the Centre for Research Architecture at Goldsmiths, Erica also holds a B.Design in Textiles with Honours from the University of Technology Sydney where she has taught design studios.

Louise Devenish is a contemporary percussionist whose creative practice blends performance, collaboration and artistic research. She develops new percussive works exploring notation, post-instrumental practice, performance and collaborative creativity. Louise is a Churchill Fellow, and is Senior Research Fellow and Percussion Coordinator at Monash University. Her academic writing focuses on Australian music, gender and music, notation and performance practices in new music.

Stephen Dougherty is Professor of American Literature at Agder University in Kristiansand, Norway. He has published articles and essays on diverse topics: nineteenth- and twentieth-century U.S. and British literature, psychoanalytic theory, cognitive science, poststructuralism and contemporary French philosophy, science studies, and science fiction. His work has appeared in *Configurations*, *Diacritics*, *Science Fiction Studies*, *Psychoanalytic Quarterly*, and elsewhere.

Mijke van der Drift lectures at the Royal College of Art, London and the Royal Academy of Art, the Hague. Van der Drift has a chapter in the recent *New Feminist Studies: Twenty-first-century Critical Interventions* (Cambridge University Press 2020), and recently a chapter in *The Emergence of Trans* (Routledge 2020). Their work is forthcoming with *Transgender Studies Quarterly*. They are working on their book *Nonnormative Ethics: the dynamic of trans formation*. They are Research Associate at the University of Cambridge with the *Revolutionary Papers* project.

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Desiree Foerster graduated from the Institute for Arts and Media, University of Potsdam with her thesis "Aesthetic Experience of Metabolic Processes". Taking on the perspective of process philosophy and media-aesthetics, she investigates the impacts of liminal experiences on human subjectivity. She will start her PostDoc at UChicago's Cinema and Media Department in July 2020.

Luciana Galliano is a musicologist and scholar in musical aesthetics, and has a prevailing competence in contemporary music. She has taught for years at Venice University Ca' Foscari and is now working as an independent scholar. She collaborated with Luciano Berio for his 1993-94 Norton Lectures and with major Italian and international musicological magazines. Among her books are *Yōgaku. Japanese Music in the Twentieth Century* (Scarecrow Press 2002), *The music of Jōji Yuasa* (Cambridge Scholars Publishing 2012), *Japan Fluxus* (Lexington 2019); ed. *Power, Beauty and Meaning. Eight Studies on Chinese Music* (Olschki 2005) and with G. Borio, *Music Facing Up to Silence. Writings on Tōru Takemitsu* (Pavia UP 2010)

Becca Rose Glowacki is a doctoral researcher at Goldsmiths, University of London. Her research and practice sit at the intersection of critical design, computing, and education. In her PhD practice-based work, she is focusing on pedagogical practices for critical technology literacies in nonformal learning spaces. Becca is an associate artist at Knowle West Media Centre, a resident of the Pervasive Media Studio, and currently co-curating art and technology festival, *Control Shift* (<https://www.control-shift.network>). More information can be found on her website (<https://www.beccarose.co.uk>).

Jennifer Gradecki (US) BFA Sculpture/Psychology, MFA New Genres, PhD Visual Studies, is an artist-theorist whose work facilitates a practice-based understanding of socio-technical systems that evade public scrutiny. Her investigations have focused on social science techniques, financial instruments, mass surveillance, and artificial intelligence. She has presented and exhibited at venues including Ars Electronica (Linz), New Media Gallery (Zadar), AC Institute (New York), Science Gallery Dublin, The New Gallery (Calgary), Critical Finance Studies (Amsterdam), ISEA (Vancouver), ADAF (Athens), and the Centro Cultural de España (México). Her research has been published in *Big Data & Society*, *Visual Resources*, and *Leuven University Press*. www.jennifergradecki.com.

Michael Greer (she/her) is entering the third year of her PhD program in Philosophy at The Graduate Center, CUNY. She is an Ethics Fellow at Mount Sinai Hospital, New York. She received her joint honors BA in English Literature and Philosophy from Cardiff University in 2015 and her MA in Philosophy from the University of Sheffield in 2017. Michael has interests in feminist ethics, social epistemology, critical phenomenology, and philosophy of language. In addition to a commitment to producing “engaged scholarship” within her discipline, she hopes to make philosophical contributions to the interdisciplinary fields of bioethics and fat studies.

Lukas Griebel is a 1st year Ph.D. researcher in Sociology at the University of Essex. In his research, he is interested in contemporary controversies in statistics and with the overarching aim of understanding the role of ignorance and non-knowledge in the discipline. Before the beginning of his Ph.D., he completed a master’s in ‘Philosophy of the Social Sciences’ at the LSE and a master’s in ‘Philosophy and Sociology of Science’ at the University of Exeter. Before this, he completed undergraduate studies in Philosophy, Political Science, and Sociology at the Catholic University of Eichstätt-Ingolstadt.

Anthony Gritten has published articles and chapters on Adorno, Bakhtin, Balakirev, Cage, Debussy, Delius, Lyotard, Nancy, Roth, and Stravinsky, and about subjects including alibis, artistic research, collaboration, constraints, distraction, empathy, ensemble interaction, entropy, ergonomics, ethics, listening, loopholes, performance, problem solving, recording, technology, timbre, and trust.

Ingrid M. Hoofd is an Assistant Professor in the Department of Media and Culture at the Humanities Faculty of Utrecht University, the Netherlands. Her research interests are issues of representation, feminist and critical theories, philosophy of technology, game studies, and information ethics. She is the author of *Higher Education and Technological Acceleration: the Disintegration of University Teaching and Research* (Palgrave, 2016), and *Ambiguities of Activism: Alter-Globalism and the Imperatives of Speed* (Routledge, 2012). Her research analyses the ways in which alter-globalist activists, as well as left-wing academics, mobilise ‘speed-elitist’ discourses and divisions in an attempt to overcome gendered, raced, and classed oppressions worldwide

Cat Hope is an artist and academic with an active profile as a composer and musician internationally. Cat’s composition practice is engaged with animated notation – graphic music notation put into motion using computers. In 2013 she was awarded a Churchill Fellowship to study digital graphic music notations internationally, and is a Fellow of Civitella Ranieri and the Visby International Composers Centre. Cat is the co-author of *Digital Arts – An introduction to New Media* (Bloomsbury, 2014) and is Professor of Music at Monash University.

Mayu Iida is a translator and PhD candidate in the Department of Media and Communications at Goldsmiths, University of London. Her research interests include feminist technoscience, media studies, archival studies and affective politics. Her PhD research involves the hauntological analysis of digital archives on the Fukushima nuclear disaster. Her article “Fukushima: a tale about beginnings and ends, or how the disaster has become truly environmental” (2018) and a follow-up blog “Child’s Play” are available on the website of *Feminist Review*.

Christina Jauernik studied contemporary dance in Amsterdam, choreography/visual arts practices at Dartington (UK), art/architecture at UdK Berlin and Academy of Fine Arts Vienna, where she is Senior Scientist. Since 2012 she has collaborated with Wolfgang Tschapeller on artistic research, exhibition, and publication projects, “Hands have no tears to flow”, Biennale Venice, “OSIRIS - World 1”, ORIS House of Architecture Zagreb, lecture series “What beings are we?”, research project and book “INTRA SPACE” (Sternberg Press, 2020), co-curating (with Marina Gržinić, Sophie Uitz) “Stories of Traumatic Pasts”, Weltmuseum Wien 2021-2024, co-leading the artistic research project “Unstable Bodies”, with Wolfgang Tschapeller, Vicki Kirby.

Stavros Kousoulas is Assistant Professor of Architecture Theory in the Faculty of Architecture of TU Delft. He has studied Architecture at the National Technical University of Athens and at TU Delft. He received his doctoral title cum laude from IUAV Venice participating in the Villard d’ Honnecourt International Research Doctorate. He has published and lectured in Europe and abroad. He is a member of the editorial board of Footprint Delft Architecture Theory Journal since 2014.

Kevin LaGrandeur is Professor at the New York Institute of Technology (NYIT), and Fellow of the Institute for Ethics and Emerging Technology. He also is a co-founder of the NY Posthuman Research Group. Dr. LaGrandeur specializes in technology and culture; Artificial Intelligence and ethics; and literature and science. He has published 50 articles and media productions and several books, and his writing has appeared in both the professional and popular press. His recent books are *Artificial Slaves*, which won a 2014 Science Fiction and Technoculture Studies Prize, and *Surviving the Machine Age* (2017), with sociologist James Hughes.

Clare Lesser is lecturer in contemporary performance (music) and voice at New York University, Abu Dhabi. She specialises in the performance of twentieth century and contemporary music, having given over sixty world premieres and has made critically acclaimed recordings, including works by Finnissey, Holliger and Rihm, on the Métier label. She is currently engaged on performance projects with Michael Finnissey and Hans-Joachim Hespos. She has recently completed a PhD in performance at the University of York where her research interests focus on deconstructive approaches to indeterminacy in works by Cage, Stockhausen and Hespos.

Matthew Lovett is a musician and theorist, whose work explores creative processes in music in relation to technology, economics, political ecology and new materialism. His musical practice, which is frequently collaborative, engages with improvisation, environmental performance, and audiovisual composition. He is Academic Lead for Music & Sound, and the coordinator for the Centre for Research in Audiovisual and Technomic Environments (CReATE), at the University of Gloucestershire.

Teelin Lucero is a second-year graduate student in philosophy at Emory University. She is interested in space, place, and modes of territoriality. So far, she has worked primarily in decolonial philosophy, Latin American philosophy, and Heidegger.

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Lilly Markaki (b.1991, Athens, Greece) is a PhD candidate in Media Arts at Royal Holloway, University of London. In 2014, she graduated from the University of Glasgow’s Art; Politics; Transgression: 20th Century Avant-Gardes MLitt programme, having previously received a B.A. in Art History from the same institution. Her current research includes and extends to a variety of topics, incorporating branches of philosophy, political theory, aesthetics, science and technology.

Jernej Markelj is a researcher and teacher in philosophy and sociology located in Cardiff, Wales. His main area of expertise are theories of affective materialism put forward by thinkers such as Spinoza, Nietzsche, Freud, Deleuze and Guattari, and others. He draws on these theories to explore political and ethical aspects of contagion, addiction and other affective phenomena. He completed my AHRC-funded PhD in Critical and Cultural Theory at Cardiff University in 2020, with a thesis on Gilles Deleuze and his ethics of immanence.

Nancy Mauro Flude's research contributes to the interdisciplinary space of performance art, feminist science and technology studies. She advances broader understandings of emergent technologies as they arise as key actors in our embodied lives. Her recent writings about how somatic and digital literary can be brought about by an aesthetic application of networking infrastructure: are: 'Performing with the Aether: An Aesthetics of Tactical Feminist Practice' in *The Routledge Companion to Mobile Media Art* (2020) 'Command-line Incantations' *Art + Australia Journal Issue 6.*; 'Experiential Prototyping' in *Intersecting Art and Technology Practice: Techne/Technique/Technology* (2018) Routledge. She leads the holistic computing network, RMIT University.

Afshin Mehrpouya is an associate professor of accounting and management control systems at HEC Paris. Trained as a medical doctor in Iran, Afshin also holds an MBA and PhD in management. His research is broadly in role of performance measurement in transnational governance. He currently studies the construction and use of different calculative knowledge forms such as rankings and ratings in transnational governance regimes. He is a member of the editorial board of *Accounting, Organizations and Society*. Prior to starting his academic career Afshin had years of experience in the design of environmental and social rankings and ratings.

Hadi Mehrpouya is a critical designer and a lecturer in computer games technology at Abertay University. His work and research interests have always been at the intersection between individuals, data and society. He recently completed his PhD in Design at University of Edinburgh where he produced a body of work revealing and investigating surveillance economies and its relation to knowledge monopolies. His critical design works have won awards and have been exhibited at national and international festivals and galleries.

Olga A. Moskvitina graduated from the Faculty of Pedagogy and Psychology at the Moscow Pedagogical State University. She received the degree of PhD of Psychology and the title of Associate Professor at the Psychological Institute of the Russian Academy of Education. She has held a job at the Institute since becoming a postgraduate student there and currently holds the position of senior researcher in a laboratory. Her professional interests are related to studying different aspects of how people cope with difficult life situations. Currently she is researching how teenagers cope with difficulties in school amid the systematic digitalisation of education.

Wolfgang Muench holds the position of Dean, Learning, Teaching & Research at LASALLE College of the Arts Singapore. He studied Fine Arts in Stuttgart and Vienna, and joined the ZKM Centre for Art and Media Karlsruhe in 1996 as software designer at the institutes of Visual Media, Music and Acoustics. He taught Media Art at Merz-Academy Stuttgart, the Hong Kong Art Centre, and LASALLE, and was Artist-in-Residence at ZKM, ARS Electronica and IAMAS Japan. His interactive media art works were exhibited across Europe, America and Asia. In 2004, he was appointed Dean, Faculty of Media Arts at LASALLE Singapore.

Mantra Mukim is a Chancellor's PhD-candidate in the Department of English & Comparative Literary Studies at the University of Warwick. His research interests are Samuel Beckett, Twentieth-Century French Philosophy, theories of time and failure.

Peeter Mürsepp has his PhD from the University of Vilnius. He has been visiting fellow at outstanding academic centres like LSE, Helsinki Collegium for Advanced Studies, Shanghai University, Al-Farabi Kazakh National University and others. Since 2011, Peeter Mürsepp is the Chairperson of the Estonian Association for the History and Philosophy of Science. In 2013 Dr Mürsepp founded the journal *Acta Baltica Historiae et Philosophiae Scientiarum* and has acted as its editor-in-chief ever since. In 2016, Peeter Mürsepp was elected corresponding member of the International Academy of the History of Science. His permanent affiliation is with Tallinn University of Technology.

Daniel Nemenyi is a lecturer in the Department of Digital Humanities at King's College London. His MA and PhD were undertaken at the Centre for Research in Modern European Philosophy. His dissertation was completed under the supervision of Prof. Howard Caygill, and it was titled *What is an internet? Norbert Wiener and the Society of Control*. It was examined by Prof. Éric Alliez (Kingston, Paris 8) and Dr Bernard Geoghegan (KCL) in 2019 and is currently being prepared for publication. He is also an editor of the journal *Radical Philosophy*, as well as its website engineer.

Marcel O'Gorman is Professor of English, University Research Chair, and Director of Critical Media Lab at the University of Waterloo. He is the author of *E-Crit* (U of Toronto Press) *Necromedia* (U of Minnesota Press) and *Making Media Theory* (Bloomsbury). He is also a practicing artist with an international portfolio of installations and performances. O'Gorman's work interweaves media theory with the creation of objects-to-think-with that provoke reflection on technocultural being.

Juno Hoay-Fern Ooi is a PhD candidate in the English Department of the University of Malaya. Her doctoral thesis studies the destabilizing processes of Georges Bataille's anti-philosophical *informe* and the myriad ways the *informe* operates through post-WWII Japanese, English and French literature. She is also currently onboard *Site and Space in Southeast Asia*, a three-year project funded by the Getty Foundation that allows her to explore the art and architectural history of Penang and Yangon. Her research looks at the hauntological processes of national myth-making and the politics of commemoration and memorialization in relation to material monuments and sites.

Helen Palmer is a writer, performer and theorist. She works as a Senior Scientist at the Department for Architecture Theory and Philosophy of Technics at the Technical University Vienna. She is the author of *Deleuze and Futurism: A Manifesto for Nonsense* (Bloomsbury, 2014) and *Queer Defamiliarisation: Writing, Mattering, Making Strange* (Edinburgh University Press, 2020).

Martin Patrick is a critic, historian, and contributor to a wide variety of publications. His book *Across the Art/Life Divide: Performance, Subjectivity, and Social Practice in Contemporary Art* was published in 2018. His chapter "Exploring Posthuman Masquerade and Becoming" was included in *Animism in Art and Performance* (2017). He is currently co-editing a special issue on Fluxus for the journal *OnCurating*. Martin has been a writing resident at the Banff Centre for Arts and Creativity and a Visiting Assistant Professor at the University of Chicago. He is an Associate Professor of Art at Massey University in Wellington, New Zealand.

Sascia Pellegrini was trained in percussion, piano, and composition at the Italian Conservatory G. Puccini in La Spezia and at IRCAM in Paris. He has performed in Europe, China, Japan, Singapore, and Hong Kong, where he lived for six years before moving to Singapore. He has conducted courses at the Academies and Universities of Hong Kong, Singapore and Shanghai (China). His contributions and articles have been featured in *Open Space Magazine* (NY), *Momm Dance magazine* (Korea), *South China Morning Post* (HK), *Culture Magazine* (HK), etc. Sascia is Composition Teacher at The School of the Arts of Singapore.

Georgia Perkins is a PhD researcher in the Visual Cultures department at Goldsmiths University. Her work critically examines touch beyond close proximity in relation to quantum entanglements, parallelism and symbiogenesis. Her research looks to writers of New Materialism, Environmental Humanities and Post-posthumanism, to think of intimacy, kin-making, and trans-corporeality across multispecies. Perkins currently has a residency as part of the 'Intelligence Debaised' programme at Exposed Arts Projects. She has recently published an E-Flux reader on 'Dizziness', and worked on a series of performative workshops called 'Dizzying Feeling of Touch' in collaboration with artist-researcher Ofri Cnaani and Sirius Arts Centre.

Franziska Pilling is a PhD Design Candidate at Lancaster University. Her research, funded by the PETRAS IoT hub, is concerned with making algorithmic intelligence and its associated systems, processes and misconceptions, more legible to users and designers through alternative design practices such as Speculative Design with Philosophy.

Andreas Pirchner is a musicologist, designer, and programmer specializing in contemporary audiovisual forms of art at the intersections of art and science. Currently, he is a researcher at the artistic research project “Gamified Audiovisual Performance and Performance Practice”, funded by the Austrian Science Fund. He has published on contemporary electro-acoustic music, generative and gamified art, film music history, and audience perception research. He has given lectures on researching gamified audiovisual performances in New York and Kyoto. He strongly focusses on exploring generative, algorithmic, and data-driven forms of design in his visual work and teaches Creative Programming at Art University Linz.

Jo Pollitt is an interdisciplinary artist and scholar, whose work is grounded in a twenty-year practice of improvisation across multiple publishing platforms. As dancer, choreographer, writer and dramaturg, her work has been presented locally and internationally including Perth Festival, Australia, Movement Research @Judson Church, New York, and Performing, Writing, New Zealand. Jo is co-founder and director of the creative arts publication BIG Kids Magazine, co-founder of the feminist research collective The Ediths at Edith Cowan University and artist-researcher with #FEAS -Feminist Educators Against Sexism. A Postdoctoral Research Fellow at Edith Cowan University, School of Education.

Stephanie Polsky is an interdisciplinary writer and academic whose work focuses on political economy, cultural identity, and the revelatory points of intersection held between the two. Most recently she has worked at California College of the Arts in the areas of Critical Studies and Diversity Studies. She is the author of the books *Of Posthuman Bondage: The Algorithmic Plantation*, “Smart” Species, and *Cognitive Apprehension* (forthcoming 2021), *The End of the Future: Governing Consequence in the Age of Digital Sovereignty*, *Ignoble Displacement: Dispossessed Capital in Neo-Dickensian London* and *Walter Benjamin’s Transit: A Destructive Tour of Modernity*.

Radek Przedpełski is an artist and visual culture scholar lecturing in interactive digital media at Trinity College Dublin. He recently curated, together with Laura U. Marks, the programs of sustainable media art at Small File Media Festival hosted by Simon Fraser University. Radek co-edited a volume on Deleuze, Guattari and the Art of Multiplicity forthcoming from Edinburgh University Press (October 2020). He co-organised at TCD international conferences on Deleuze, Guattari and aesthetics (2016, 2018) and on art in the Anthropocene (2019). Radek’s research interests include post-digital media in the Anthropocene and its interstices of the environment, science and technology.

Andrej Radman has been teaching design and theory courses at TU Delft Faculty of Architecture since 2004. A graduate of the Zagreb School of Architecture in Croatia, he is a licensed architect and recipient of the Croatian Architects Association Annual Award for Housing Architecture in 2002. Radman received his master’s and doctoral degrees from TU Delft and joined Architecture Theory Group as assistant professor in 2008. He is an editor of the peer-reviewed journal for architecture theory *Footprint*. His research focuses on new-materialist ecologies and radical empiricism. Radman’s latest publication is *Ecologies of Architecture: Essays on Territorialisation* (EUP, forthcoming).

Gi Taek Ryoo is Professor of English at Chungbuk National University, Korea. He has published a number of articles on poetry and science, such as ‘Cybernetic Warfare: The Cold War Poetics of Elizabeth Bishop’ and ‘Wallace Stevens: Chaos, Complexity, and System of Self-reference’. He is particularly interested in the parallel development of poetry and science in the twentieth century. Recently, he is working on ecopoetics of experimental language poetry and the poetry of Anthropocene.

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