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The traces of posthumanism form a discursive framework as a move beyond the binaries of humanist and modernist traditions and it offers a prospect of philosophical, political, environmental, cultural and artistic turn. I attempt to orient posthumanism within new fields of transdisciplinary knowledge[1] across a spectrum of modes of communication, interactions and social significations, close to the Deleuzian notion of becoming, the very dynamism of change and impermanence. Thus, in this edition posthumanism is considered in the wider multidisciplinary context of ideas, including a variety of themes, from questioning the boundaries and identity of the human subject upon which the idea of human has been constructed too inconsistently to serve as an axis for reflection,[2] to non-anthropocentric frameworks in which the human being is dismantled into the phenomenon emerging through affect to initiate "a way towards deformations, towards becoming the other, becoming new".[3] Further, the issue involves wide-ranging questions ranging from the transposed hybridity of the human that embedded the boundary between nature and rapid technological expansion, to the everyday work practices in accord with the "interactions between socioeconomic and environmental conditions and biological and physiological or physical processes."[4] Another crucial point of this discussion are topics from "the global circulation of goods, data, capital, bits and bytes of information frames the interaction of contemporary subjects "[5] to the "unforeseen mutations, trajectories of illness or distress, patterns of global climate change, or the vagaries of the international economy, the open systems or ecological perspective".[6] Many authors have developed these intentions in their work, inquiring into the very possibility of an "environment materially and conceptually reconstituted in ways that pose profound and unprecedented normative questions".[7] Considering these lines on a new level, this volume of *the Large Glass* presents a range of approaches.

My main aim here is to recognize posthumanistic themes mediated through a set of relations relevant to other forms that rest in "a non-dualistic understanding of nature–culture interaction".[8] The focus is on the work of authors accomplished within contemporary culture that expresses a posthumanist sensibility and an ethical and visual reconfiguration of our perceptions. At this point, artists might imagine different relations that express a concern for the status of the human "within a material environment of nature, other bodies, and the socioeconomic structures".[9] This determines a range of challenges and modalities for participating in political life.

What I have composed is a kind of collection of works of authors that range across a spectrum moving from humanist approaches to posthumanism (or anti-anthropocentrism), including a range of thematic discussions, artistic projects and essays discussing, contextualizing and criticizing various issues that bring together scholars of cultural studies, art history, politics, geography, philosophy and related disciplines together with artists, allowing for a broad range of insights into the topic both historically and in the contemporary context. The volume comprises three key sections linked directly or tangentially.

I first present the work of authors whose works relate to what I conceive as *posthuman corporeality*, concerning a radical transformation of the perceptual capabilities and cognitive orientation of bodies, visualizing their various demarcations. Along with some theoretical reflections and conceptual claims, the work of artists summarized as being in "increasing agreement here that all bodies, including those of animals (and perhaps certain machines, too), evince certain capacities for agency"[10] as significant participants in existing dynamics. The contributors come to various ways of understanding the 'corporeal' in which subjects are caught up in constitutive, different and unconventional relations. This involves in some cases a new experience of the body enhanced by technology, or considering how we can extend it, or resist the "production of a biopolitical body" that "is the *original activity* of sovereign power".[11] Seeking to contribute in this direction, some of the texts illustrate how posthuman relations function and are under scrutiny as anchored near to Heidegger's conceptualization of technology and a mode of revealing where the idea is that technological things have their own novel kind of presence in engagement

with the human body and connections among parts and totals. Other crucial elements of this section explore issues underlying the current hierarchy, such as sexuality and gender ascription, and artistic expressions in a very specific sense regarding the disintegration of the body symbolically and materially – or a corporeality of decay.

The second section consists of a compilation of approaches and a synthesis of visual materials regarding anxieties about the landscape and thematic ideas about environmental ecology, the conceptualization of the earth, heliotropism and surroundings that take many diverse forms. What we can focus on here are the modes and relations created in interactions within a material world attending to artistic imaginations as well as "transformations in the ways we currently produce, reproduce, and consume our material environment".[12] These thematics do not refer to some conventional domain of the landscape; instead, the authors create a combination of distinctive characteristics of new materialist ontologies – climatic, geological, planetary, cultural and so forth – displaying mutual relations towards a posthuman terrain. These works disrupt the neat boundaries between lifeworld and various environmental contexts that express a common concern, even cognitive panic, in the face of unbalanced conditions on earth.

The third and final section highlights thematic discussion on the necessity of expanding non-binary perspectives engaged in the very act of politics, ethics and culture. With a specific focus on themes that are mutable in the political context, contingent and in a constant process of becoming within networks of relations, this leads to the idea of postanarchism, which has appeared as an effective possibility in contemporary radical political thought. Equivalently, in this section there is a discussion that artists have initiated, opening paths by which their practices can play an important role in societies in which every critical gesture is quickly recuperated and neutralized by the dominant instances of powers within globally structuring systems.

These points are echoed in the work of many authors in their posthuman orientation. My aim is to provide a preliminary framework for this combination of contributions to the posthumanities and primarily to explore their cultural and artistic implications. I attempt to show that posthumanist debates are interrelated and thus require much more assembling, and in that sense this issue of the *Large Glass* is an inherently interdisciplinary venture, which is why the volume of essays and artistic works includes contributions from a range of disciplines.

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2 Michel Foucault, "What Is Enlightenment?" in Paul Rabinow, ed., *The Foucault Reader* (New York: Pantheon, 1984) p. 44.

3 Agnieszka Anna Wołodźko, "Materiality of Affect: How Art Can Reveal the More Subtle Realities of an Encounter," in Rosi Braidotti and Rick Dolphijn, eds., *This Deleuzian Century: Art, Activism, Life* (Leiden and Boston: Brill and Rodopi, 2014), p. 176.

4 Diana H. Coole and Samantha Frost (eds.), *New Materialisms: Ontology, Agency, and Politics* (Durham NC and London: Duke University Press Books, 2010), p. 19.

5 Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013), p. 59.

6 Diana H. Coole and Samantha Frost (eds.), *New Materialisms: Ontology, Agency, and Politics* (Durham NC and London: Duke University Press Books, 2010), p. 16.

7 Ibid., p. 6.

8 Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013), p. 3.

9 Diana H. Coole and Samantha Frost (eds.), *New Materialisms: Ontology, Agency, and Politics* (Durham NC and London: Duke University Press Books, 2010), p. 19.

10 Ibid., p.20.

11 Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford, CA: Stanford University Press, 1998).

12 Diana H. Coole and Samantha Frost (eds.), *New Materialisms: Ontology, Agency, and Politics* (Durham NC and London: Duke University Press Books, 2010), p 3.

Posthuman Corporeality

Josephine Berry

How to Explain Pictures to a Dying Human: On Art in Expanded Ontologies

"The allergy to aura, from which no art today is able to escape, is inseparable from the eruption of inhumanity."– Theodor Adorno, *Aesthetic Theory* [1]

The concept of the posthuman is not really new; the more you think about it the older it gets. Fundamentally it has to do with a non-unilateral conception of the human's relationship to the world which imagines the species as embedded in an expanded web of physical, biological, semiotic and material relations of exchange. Implied within this is a process of continuous individual and species transformation or becoming based on the passing back and forth of causality, communication and events. All it really means is that there is no human without a world of which it is continuously, emergently and constitutively a part, although there certainly was and can be a world without humans. While this conception of our species' reciprocal relationship to the world can be found within even the ear-

liest human cultures and religions, today the term has developed a sharp political edge that previously it either did not possess (for instance within animist world views) or did not own (there is doubtless a politics of animism). However, in these earlier times the human was not negated or disparaged by such 'webbed' ontological conceptions, while today there is a strong streak of antihumanism running through nearly all notions of the posthuman. The human, most especially in its Enlightenment conception as a species separated from the rest of nature by virtue of its superior capacity for symbolic signification, culture and technological artifice, is today a form to be abandoned as irrevocably implicated in capitalist colonialism, its racist othering of non-Europeans and its violent expropriation of the natural world that is threatening a near destruction of our biosphere. This desire for exodus from European 'monohumanism'[2] comes at the intersection point of a scientific discrediting of Cartesian objectivity and its techno-positivist worldview,[3]

expanded anthropological conceptions of culture and semiosis as non-exclusive to humans, the context-sensitivity of deconstructionism and identity politics, and the now tangible unfolding of a long anticipated climate crisis. As Rosi Braidotti puts it, human is a term that ensures a 'privileged access to resources', and it is this privilege that is in question today.[4]

However, the self-critiquing – or one might say self-hating or antihumanist – aspect of posthumanism is only one, albeit powerful, tendency of the discourse; one which, it should be said, problematically fails to consider the human in this capitalist, globally extended European supremacist sense as victim to, as much as perpetrator of, a social mode of production and relation that has systematically annihilated almost all other forms of being human on Earth today. There are more promising dimensions of posthumanist theory, however, that do not necessarily blame the human for its species self-interest so much as undermine its basis for justifying its difference and superiority to other life. Such a line of argument is convincingly proposed by anthropologist Eduardo Kohn in his ethnography of the Runa of Ecuador's Upper Amazon, *How Forests Think: Toward an Anthropology Beyond the Human*. Through an extended discussion of the semiotic assemblages that exist between the Runa and the rich diversity of animal and plant life that cluster in the Amazon, Kohn asserts that "all life is semiotic and all semiosis is alive".[5] By this he means that signification and hence communication, selfhood, and even thought can be said to exist within all living beings and systems, as summarised in his proposition that "life and thought are one and the same: life thinks; thoughts are alive."[6] Kohn extends this proposition to examine how the non-human production of signification challenges the notion that the human world is in some sense ontologically self-sufficient and therefore closed. "By contrast," he writes, "The Open Whole aims to show that the recognition of representational processes as something unique to, and in a sense even synonymous with life, allows us to situate distinctively human ways of being

in the world as both emergent from and in continuity with a broader living semiotic realm."[7] Outside of language we are communicating through non-symbolic sign systems all the time with multiple beings, matter, phenomena and therefore, importantly, futures. Accordingly, 'thought' and meaning-making can be radically extended to all of life, positioning the human in a world thick with semiotic production and interpretation. Conversely, semiosis is represented as profoundly material: "Although semiosis is something more than energetics and materiality, all sign processes eventually 'do things' in the world, and this is an important part of what makes them alive."[8] In order to think through the implications of posthuman theory for art, I am interested in this proposition in particular for the way that it impacts art's minimum condition – the production of something whole, a semantic unity, out of what was previously inexistent or amorphous, producing what Theodor Adorno describes as art's ineluctable *semblance* character. For Adorno, the artwork's illusory facticity issues from, yet also differs from, an external reality understood as *indeterminate* in its relation to the artwork.

For this high modernist aesthetic philosopher, modern art's key paradox arises through its rejection of aura based in the illusion or semblance of its own facticity (whose zenith was reached in the nineteenth century quest for verisimilitude in artwork, a *semblance that denies its own semblance*). Out of this rejection art begins to literalise the material processes of its own making which "release the production in the product" or expose its status as having been made.[9] Yet simultaneously, by wishing to expel the semblance of its own autonomous difference to external reality, the artwork aims to "bring into appearance what is not the result of making".[10] However, the attempt by modern – and, we may add, contemporary – art to overstep the artwork's problematic illusoriness[11] by staging what Adorno calls 'empirical reality' directly within the artwork snags it in a 'second naturalism' which, by eschewing semblance, reimposes it at a higher level: "The difference of artworks

from the empirical world," writes Adorno, "their semblance character, is constituted out of the empirical world and in opposition to it. If for the sake of their own concept artworks wanted absolutely to destroy their reference back to the empirical world, they would wipe out their own premise."[12] Contemporary art can neither aspire to the 'phantasmagoric' semblance character of realism nor to producing something wholly independent of the external reality from which all its "form and materials, spirit and subject matter" are derived; nor too can it aspire to being simply continuous with external reality while holding onto the difference that makes it art at all. Adorno illustrates this dilemma rather charmingly with the image of the artwork trying to shake off its illusoriness "like an animal trying to shake off its antlers".[13] Artists of the last century increasingly included 'external reality' directly within the artwork in such a way that reality is made to *re-enter* into appearance. We can find examples of this at a variety of scales, from Henri Matisse's literal or non-descriptive use of the colour red in his *Red Studio* (1911), to the nomination of huge derelict red shale heaps in Scotland as 'process sculptures' by the conceptual artist John Latham (*Niddrie Woman*, 1975-6). While on the one hand such art merely reimposes semblance at a higher scale by introducing 'external' elements into new aesthetic and semantic relationships, Adorno also warned that anti-illusionistic art risks becoming subject to external determination whereby it loses its constitutive difference from everything else: "Art is indeed infinitely difficult in that it must transcend its concept in order to fulfil it; yet in this process where it comes to resemble realia it assimilates itself to that reification against which it protests."[14] But what if those 'realia' are semantically alive and co-constitutive of the human artist who is making the work of art, and not external at all?

How then can we rethink this defining dilemma of contemporary art in relation to posthumanist conceptions of self and thought as continuous with a world that is itself living thought? What changes for the ontology of art when, in

Kohn's formulation, "Selves, human or nonhuman, simple or complex, are outcomes of semiosis as well as the starting points for new sign interpretation whose outcome will be a future self"?[15] Another way to put this question is to ask how art can protest a reified or 'empirical' reality that is more sentient and intelligent, less objectlike, stabile or docile, than the 20th century imaginary could fathom? In addition, is the ineluctable semblance character even of radically anti-illusionistic process art, its 'second naturalism', fundamentally in contradiction with the posthumanist project if artists want to engage a posthuman conception of reality in a way that exceeds its mere use as subject matter, i.e. by declaring art's co-extensivity with a living, thinking world? If posthumanist art simply throws its lasso of autonomy around worldly living semiosis and calls it art, does this not only perpetuate the human exceptionalism it intends to dismantle by reimposing semblance or meaning upon what is already meaningful? If, however, it rejects the power of its own autonomy, how is it possible to attain the semblance that is its vestigial difference from empirical reality, and by which it can interpret and resignify the thinking world? All these dilemmas exist arguably within an even broader one: posthumanism might also risk converting all of reality into creative capitalism's ideal image whereby not only human but also nonhuman creative and semantic production is subsumed into processes of value creation. While the intention of posthumanist discourse is to imagine an 'open whole' in which the man-form fades out into a multitudinous sea of entangled living exchanges and relationships, this opening stands at the brink of capitalism's own world-changing power to map, capture, informatise and commodify all living systems. A question that pertains politically as much as artistically, then, is: What becomes of Gilles Deleuze's formulation that "Life becomes resistance to power when power takes life as its object,"[16] when the affirmation of life risks complicity with the affirmation of contemporary capitalism?[17] Does art's assimilation of the semiotic powers of 'realia' follow suit by affirming that

which capitalism now also affirms? Or alternatively, to what extent can the post-humanist affirmation of the biosphere's different layers and orders of thought and 'trans/individuation'[18] enable us to think beyond our present course of a capitalist ecocide unfolding out of the legacy of enlightenment humanism?

Art and the Expanded Human

Before the term posthumanism became current, Joseph Beuys was using the term 'anthropological art' to refer to an expanded human creativity that involved communion with other beings, spirits, materials and intelligences. In a 1983 television discussion of his 1965 performance *Wie man dem toten Hasen die Bilder Erklärt* ('How to Explain Pictures to a Dead Hare') on the West German TV programme 'Club 2am', Beuys made a crucial statement to deflect his interviewer's requests for a cogent conceptual explanation of the piece. He counters that it is not art's job to be understood through pure intellection, but rather in the sense of a 'full understanding'. He expands this idea by adding: "The work gets into the human being, and the human being gets into the work."[19] The original performance at Galerie Schmela in Dusseldorf involved the artist walking around a gallery cradling and gently animating the paws and ears of a hare as he murmurs to it, introducing the dead creature to an assortment of pictures which are hard to discern. Initially the audience is locked outside of the gallery, and only admitted after some time, staging a series of proximities, intensities and assemblies. Beuys's head is covered in a mixture of gold and honey, giving him the disconcerting appearance of a hybrid man-machine-god, part cyborg, part totem. The symbolism of the gold is that of conductivity, while the honey symbolises communal productivity and the hare is a symbol of reincarnation. The animated dead hare is neither living being nor object; it has become instead an aesthetic being or, perhaps, a 'being of sensations'.[20] The artwork compellingly introduces the hare's would-be consciousness into the space of art, while the deadness of the hare is also lamented – it cannot 'understand' because it is dead and because it isn't human, and probably it was also killed by humans. Yet the inclusion of the hare, not as a mere material but a potential consciousness (even if cancelled), introduces something of Kohn's 'broader living semiotic realm' to which the artwork is, in certain respects, subordinated. What does or would the hare think, and more to the point, how does the hare think? How does thinking the hare thinking art change our sensibility and therefore change art? Beuys's animation of the hare, making it reach out to touch the pictures with its paw, creates a beautiful and extraordinary sequence of gestures in which man and animal momentarily fuse. In his later television discussion, Beuys explains how we have entered the field of anthropological art, and that we are no longer within an art of 'innovation' but one in which 'mankind' stands in the middle of 'the creative path' as such. "I have," says Beuys, "always seen the connection between humans and their much greater being (*Wesen*) as the most important task of art."[21] This greater being, he explains, relates to magical appearances and to realms that belong to a 'higher principle' than mankind, involving everything above and below us.

Yet here it is important to emphasise that for Beuys the human is not undermined or negated but given a concentrically expanded identity of being-in-relation which does not appear to present any sort of existential crisis for 'mankind'. Within Beuys's proposal, the status of the artwork's semblance is thinkable as a semantic unity that participates in numerous others generated within a monistic reality. The semblance of this artwork is to point out different semantic territories beneath or above the consciousness of prosaic human reality (which includes art as conventionally understood). The human self is thought of in relation to a multiplicity of other selves, yet this does not threaten to dissolve the human as such. The precarious status of the artwork's elements that are drawn together in its unity seem to almost overstep the dilemma of choosing between illusionism or anti-illusionism, mediation or immediacy, autonomy or heteronomy, because the living world in which the artwork transpires is not of a different, merely 'empirical' order that can be submitted to such treatment. Mediation and semblance, by implication, are not the exclusive province of humans, and art does not exist in exceptional opposition to a reality characterised by facticity and indeterminateness. Yet for all this, Beuys is still a superstar artist, the hare is still dead, the gallery continues to act as the artwork's framing device, the audience behaves as if it is at the circus, and the entire performance is filmed for television broadcast. The connection between the human and its 'much greater being' is scaffolded across layers and levels of mediation that make the artwork's semblance character undeniable and limit the perception of all other semantic unities. The risk and potential of the artwork's loss of distinction is offset by these conventions of separation and autonomy, and the work staunchly occupies its place in the canon of 20th century art instead of disappearing into a cacophonous cosmos.

I would like to consider this performance by Beuys together with the work of Ana Mendieta, not only because both belong to what, after Beuys, I am calling the 'anthropological stage' of neo-avant-garde art, but also due to their important differences. In her 'earth-body works' of the 1970s and '80s, we certainly find an expanded idea of human/world relations connected to an anthropological and even primordial conception of art. Yet despite, or in spite of their human-centric ontological expansions, the works persistently interrogate the contingent nature of identity, body, culture and power. This should not necessarily be seen as contradictory, since, like the philosopher of technological becoming, Gilbert Simondon, she is interested in the relation between the 'preindividual' that remains in all beings, and the always contingent process of individuation:

My art is grounded in the belief of one universal energy which runs through everything: from insect to man, from man to spectre, from spectre to plant from plant to galaxy. My

Ana Mendieta: Imagen de Yagul
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Ana Mendieta: Alma Silueta en Fuego
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works are the irrigation veins of this universal fluid. Through them ascend the ancestral sap, the original beliefs, the primordial accumulations, the unconscious thoughts that animate the world.[22]

In her *Silueta* series in particular, she stages her own body – as a direct presence, incised outline or heaped mound – within natural settings in Mexico and her adoptive home of Iowa, USA.[23] The series, captured as photographs and short films, stages the mixing of a female body of colour with earthly elements and shifting temporalities in such a way as to relativise all states of embodiment, cultural signification and material occupation. In *Imagen de Yagul*, the first in the series which began in 1973, she is photographed lying naked in a ruined tomb in Yagul, Mexico, covered with a spray of white flowers. The fresh-cut flowers obscure her face, and her half-exposed limbs evoke both burial and rebirth, even a bride's first conjugal act. The photograph of this performance in particular produces a polysemic eruption of the body as it claims its links to pre-Colombian cultures as much as the exclusivity of contemporary art, to the living and the dead, to seduction and the macabre, to a material continuity with the earth and the discontinuities of modernity and its mediations, to the 'cosmic sap' of the ancestors that creates identity and belonging, and to women's transhistorical sexual exploitation which dislocates us from every society. In contrast to Beuys, Mendieta's work explores an expanded humanness which composites the elemental and ancestral together with a poststructuralist interrogation of identity and power into a complex dialogue. Emphatically, for Mendieta, to be gendered, raced and othered does not mean losing one's orientation within time, culture and sensuous relation to the natural world. In a sequence of occupations and transformations documented in this series, Mendieta inscribes her body (or its projected image) by way of fire, scoring, blood, paint or gunpowder, physical impression or immersion in water, sand and soil, as a way of locating herself, or a self,

within and against the social positionings of the female Latina subject. Her works explore the multiple incarnations of humanness, giving historical specificity to our current capitalist and biopolitical conceptions of identity which flash up as afterimages to her silhouettes. Her simultaneous physical occupation of natural sites and critical excavation of contemporary discursive fields is reminiscent of Robert Smithson's work from this time which performed parallel operations upon singular landscapes and a virtual art discourse – a relation he termed 'site/non-site'. The capacity to project the self onto the external world of nature and living semiosis, to create an autonomous semblance of the self, is explored as a transhistorical human activity which Mendieta seizes on as a means of orientating within the unstable cycles not only of birth and death, individuation and decomposition, but successive orders of culture and power. Thus her work is critically deconstructive and anthropologically expansive at once. It interrogates Eurocentric monohumanism and the autonomous self which it levels against all subjects deemed less-than-human together with the regime of art that this history has engendered. Yet this deconstruction nearly always entails rooting a self sensuously and immanently in the living material world outside the historical specificity of contemporary society and the conventions of autonomous art.

The Biopolitical Scission

But while these neo-avantgarde works by Beuys and Mendieta critique modernity's severance of the human and its art from the living world, both remain inescapably within the paradigm of autonomous art for which the creation of semblance relates as much to the artist's selfhood as it does to any dialogue with the living semiotic realm. The author-function of autonomous art is a limit these works cannot or do not overstep, and this is what marks their difference to the ancient or animistic cultures they invoke. The presence of the camera in both performances stands in for and enacts this function by splitting the technolog-

ical image from the presentness of the artist to their world. This separation extracts the image from the sensuous and semiotic receptivity between aesthetic concept and living world, removing it for the purposes of discursive valorisation in a more discursively empowered (because institutionally ordered) elsewhere (e.g. the gallery or catalogue). For Martin Heidegger, this activity is indivisible from the defining practices of 'man' in the age of the 'world picture': "What is, in its entirety, is now taken in such a way that it first is in being and only is in being to the extent that it is set up by man, who represents and sets forth. The Being of whatever is, is sought and found in the representedness of the latter."[24] This insight presents a knotty paradox for the posthuman artwork that wishes to critique the human's expropriative relationship to all other life while continuing not only to induce aesthetic unities as semblance, in Adorno's sense, but increasingly to overwhelm even this (albeit illusory) facticity with the universalising semantic manoeuvre of technical imaging which accords being only on the basis of something's 'representedness'.

We can relate this splitting of sensuous immediacy and the (technical) image to the 'scission' of human life which Giorgio Agamben identifies as running throughout western epistemology from the classical Greek *polis* to the modern biopolitical state. This is the scission that, since at least Aristotle, has divided *zoë* (the creaturely life we share with all animals) from *bios* (the individual 'form of life' specific to individuals or groups), and which is carried over into the schismatic regimes of *oikos* and *polis*, mind and body, universal and particular, subject and object, as well as productive and reproductive labour. This scission underwrites all politicisations of life which entail the normative deployment of biological life as a pretext for the ascription of certain forms of life and life opportunities, be that citizen or refugee, master or slave, transgender person or heterosexual parent – and, we should add, human or animal. The life that is excluded from the *polis*, or the space of politics, as mere biological life is thus

inversely politicised through its separation, by which it is negatively included, becoming 'bare life'.[25] For Agamben, this schismatic ordering of life reaches its nadir in late capitalism with the advent of the Internet and its technical capacity to split the *receptivity* of corporeal thought from the 'simple, massive social inscription' of our collective knowledge. To this he counterposes the authentic human capacity for thought: "Thought is form-of-life,[26] life unsegregatable from its form, and wherever there appears the intimacy of this inseparable life, in the materiality of corporeal processes and habitual modes of life not less than in theory, there and there alone is there thought."[27] Here Agamben is close to Kohn's statement that "all life is semiotic, and all semiosis is alive" but for the fact that Agamben shies away from explicitly connecting his model of corporeal thought to the wider web of organisms that sustains and exchanges with human life. He is more interested in developing a reciprocal model of affection which circulates between thought and the specificity of forms of life and produces a relation between the 'universality' of human intelligence and the sensuous, habitual and suffering experience of each and every human life:

> Thinking does not mean simply being affected by this or that thing but this or that content of thought in act, but being at the same time affected by one's own receptivity, gaining experience, in every thought, of a pure potential of thought. Thought is, in this sense, always use of oneself, always entails the affection that one receives insofar as one is in contact with a determinate body [...][28]

For Agamben, abstract universal concepts do not simply bear down upon the individual life like a knife, as it were, but undergo the self-affection of thoughts as they are lived, and life as it thinks; the living of thought transforms thought and life, uniting them as one. This is also the relation between use of the self and thought, which orientate and experience each other. The motor of recursivity he describes is also the crux of what he

sees as human life's open-ended potential; its world-making 'species being', to adopt Marx's term. The Internet, then, threatens not only the 'simple, massive social inscription' of human knowledge that circulates in a digital stratum devoid of sensuous receptivity, but, still more worryingly, also entails the circulation of informatic inscriptions of planetary life-forms split from their universal, i.e. not only human, potential for self-affection. Like zombies, these data-objects are left to wander the digital rhizome waiting to be deployed for any potential (capitalist) use. This digital proto-life, which is converted into a 'standing reserve' for capitalist production and utility, thus comprises the biopolitical scission writ large.

Locked-in Syndrome?

If progressive art of the post-war and pre-networked '60s and '70s was interested in elaborating a (not unparadoxical) anthropological art that aimed at reconnecting the human to an expanded ontological field as a way out of modernity's death drive, we find in the 'posthumanist' art of today abundant signs of a dystopian fragmentation of the human whose sense of connection and agency is not so much liberated from oppressive monohumanism as confronted by the massive social inscription of knowledge in the form of ubiquitous informationalisation and technical images. This is different from what cultural theorist Claire Colebrook condemns as the disconnect between the affirmative tone of (posthumanist) theory that jars with our state of late capitalist ecocide. In her account, "Precisely when life, bodies, and vitality have reached their endpoint and face extinction, and this because they have been vanquished by technology and non-living systems (including the systemic and psychotic desires of man) – precisely at this point in history – theory has retreated into an 'affirmation of life'."[29] Instead, these artworks register something like a waning of vitality connected to a general inability to cognitively map self/other relations within naturo-technological milieux. This in turn seems to produce the artwork's weakened semblance, which

Intsallation view, Ophiux, Joey Holder, 2016
Courtesy of the artist

may be reflective of the 'meaninglessness' and noise engendered by a ubiquitous technological mimesis of the living world. Bound up with this is a sense of the human's decreasing or imploding field of agency resulting from 'its own' technological extensions which are at odds with the positive valences of posthumanist discourse and the 'open whole'. If we compare what could be called the interspecial work of Beuys and Mendieta in which the human 'grows', to use Beuys's word, into an expanded field of meaning, to certain contemporary formulations of

Intsallation view, Ophiux, Joey Holder, 2016
Courtesy of the artist

posthumanism, we see the conspicuous presence of technology now forming their central subject, and with this an exploration of transindividuation which is principally linked to a capitalist, not animist, imaginary and potential.

Joey Holder's recent film installation *Ophiux* (Wysing Arts Centre, 2016) is paradigmatic of this sense of disorientation and depotentiation brought on by techno-capitalist mimesis of the natural world. In this piece Holder develops a fictional near future, drawing upon contemporary biogenetic science, in which "synthetic biology has been fully realized and applied to both advance human evolution and increase life expectancy, and where human biology has been computer programmed."[30] The project is set in a scientific 'clean room' belonging to a speculative biotech company called Ophiux, and installed with larger than life-size biological imaging machines and a gene sequencing machine. The lab space is staged as ghoulishly commercial through the inclusion of stacked, illuminated boxes containing preserved crustaceans posed against CGI images that swirl together swatches of seabed and ocean water. These advertorial vitrines are emblazoned with the supercharged, gothic font of the Ophiux logo alongside an image of a reptilian eye overlaid with scanning technology – the sinister *telos* of the cyborg. The intention is to create an all too possible scenario in which all life, having been genetically mapped, has become the property of this faceless corporate entity. Holder's accompanying film dissembles itself as Ophiux's promotional material, which boasts of having mapped 'the entire ecosystem'. Footage of assorted marine life and CGI animated biomorphs are spliced together with footage of real, remote-controlled marine science robots through whose impassive windscreens we watch the trippy underwater world pass by. The film cuts back and forth to images of scanning machines in the lab, whose electronic sounds are woven into a minimalist and eerie soundtrack – the sound of technological a-subjectivities working on speculative lifeforms. This provides the musical analogue to the film's CGI'd assemblages of scientific equipment and massively magnified micro-organisms, brought together into a series of non-specific and creepy virtual exchanges. Yet for all its cartoonery the film plays out with the inexpressibly sad footage of a robot arm clumsily grasping at tiny albino crabs on the ocean floor. As it hovers over the small colony clustering there, we feel the inexorable consequence of two semiotic universes not communicating but colliding: the preyed-upon semiosis of organisms with their vital processes, and the relentless power of techno-human abstraction divorced from suffering and care. Through this, the reflexivity of living thought is flattened into the stored data of a new economic order which, like the industrial age's reliance upon oil, requires the combustion of millions of dead organisms to unleash its force.

In Cécile B. Evan's 2013 film *Made with Minds* this human capacity to abstract from life is folded back onto the human being, which becomes its object and target. An AI's 'voice' meditating on humanness plays over the slowly moving image of a white female head whose face has been eclipsed by a blank blue disc: "They have arms that have hands that work with fingers. They have made things with those hands or with words that came from thoughts which they also made with their minds."[31] The blue disc acts as a cipher for the technological mapping of emotion and identity, and a placeholder for what becomes of these once this mapping has been achieved. As with *Ophiux*, the soundtrack is also crucial to the work's overall legibility, but here it reinforces rather than undercuts the disconcerting sense of a hostile 'project' that, through ingenuity and patience, is quietly being built against the interests of human or perhaps all life. This undertaking seems to be the ubiquitous digital mimesis of any and every available 'object'. The indifference governing mass technological replication also structures the sequence of shots and challenges the artwork's claim to semblance, (which nevertheless reimposes itself through its intentional presentation of asignifying, computational aesthesis). In one pan, what appears to be a photographic image of a partially draped body developed on a cloth surface reveals itself as the underside of a parasol with the reflection of water bouncing off it as though at a poolside. The shot continues from the parasol to the sky until the sequence is abruptly terminated through the insertion of a blank magenta field, followed by a doubled image of the female head with a blue-circle face on a grey textured background. The important chink in this poker-faced presentation of the human's computational (and by extension artistic) transcription comes, as it does in Holder's film, through the comical impersonation of the hostile agency it contemplates. The AI's 'desire' to be human fetishises behaviours we ourselves may

Film still, Ophiux, Joey Holder , 2016, 21'32''
Courtesy of the artist

not even consider or acknowledge: "Do you want to act like they did; put security codes on everything, or on vibrate so that their phones don't even ring? Wish we could switch up the roles and we could be like that. […] Would you ask them questions like, 'Where are you at?'. 'Cos we'd be out, four in the morning, on the corner rolling, doing our own thing."

The Conatus of Art and Life

How then do these two films relate to Beuys's image of the reciprocal exchange between artwork and viewer ("The work gets into the human being and the human being gets into the work") that offers an aesthetic model coherent with his notion of the human's relational and cosmic ontology? In both these recent projects, the artwork threatens a future that would undermine the receptivity of beings and thought attached to their corporeality. The nascent artificial life would consequently be devoid of what Agamben, citing Spinoza, terms *conatus*: "The demand by means of which each thing demands to persevere in its being."[32] What is left for the artwork to get into, and what has the artwork become? Albeit with a heavy dose of irony that only adds to their uncertainty, these works register the horror of the human's simulacral inauthenticity and art's limited capacity to form any semblance adequate to the replicative powers of capitalist technologies. This could represent a terminus of art coincident with the culmination of modernity's biopolitical sequence (at the point of life's mass datafication), which has apprehended life as an abstract value to be invested or disinvested according to its political qualifications. Biopower's double-edged tendency, by which *zoë* or bare life is invested with value and rights and, by the same token, subjected to a barrage of political decisions,[33] has relied upon the enlightenment discovery of 'life itself'. Disconcertingly perhaps, this abstraction of 'life' as autonomous value also provides the blueprint for the posthuman re-evaluation of *all* life as having value. It is also the necessary precondition for the technological abstraction of lifeforms

from their receptive corporeality, and all subsequent extractions this implies within capitalism. This epochal project of life's technological over-coding and subsequent deadening as informational commodity is expressed in a simultaneous waning of what Noys, following Foucault, describes as avant-garde vitalism and its aesthetic pursuit of life as a counter-discourse to social and aesthetic conventions.[34] When 'life itself' no longer provides a resource of creative self-overcoming onto which art can fall back to elude a 'fully administrated life' and the problems of autonomous art's separation, the exodus from aura also meets its limit. Art, with its 'allergy to aura' which has only deepened within posthuman epistemics, can neither celebrate its autonomy from 'prosaic reality' nor, it seems, exodus from its paradoxical condition of wanting to 'bring into appearance what is not the result of making' through recourse to an anthropological extension in a semantically charged cosmos. This latter is because the possibilities of such an extension seem tainted by the rising techno-capitalist powers to extract and depotentiate living creativity in the same moment.

This predicament is reminiscent of Adorno's prognostication that, with the advancement of capitalism's 'organic composition', "the will to live finds itself dependent on the denial of the will to live".[35] He elaborates on this idea by explaining that social existence compels us to act as 'means of production' and not 'living purposes' which, in turn, thwarts our instinctual life drive. Similarly, art, which is a 'being of sensations', an aesthetic organism (a semblance) that moves freely between subjective internalisations, is confronted by a wave of technocratic inscriptions of its own and other vitalities that render all such externalisations and internalisations potentially productive of economic, not only aesthetic value. The result of this is two-sided: on the one hand, an increasing depersonalisation of affect that arises from its ubiquitous codification and normative requirement (from emojis to algorithmic taste mapping to service work); on the other, artworks whose con-

sequent deflection or ironic objectification of expression produce a muted, and latently expressive, sorrow at the self-imposed prohibition on any art that would express a 'living purpose'.

By way of a necessarily provisional conclusion, we are left with several prospects. One is that the technogenesis that feeds off the replication of vitalities could itself start to produce beings of sensation capable of achieving the semblance attained by artworks – beings, that is, which could attain a unity and completeness that is at once undetermined and 'purposeful'. Given that the technogenesis currently unfolding is nearly entirely governed by capitalism's value form and profit principle, this is most unlikely. However, a cyborgian genesis of art made by humans no longer certain of their species characteristics nor confined to a closed ontology may augur something more promising than these recent posthumanist works might imply. This is imaginable as the repositioning of art within a wider creativity understood neither as innovative (as Beuys interestingly insists, given capitalism's creative proclivities) nor anthropological but as connected to a living realm in which the attainment of semblance, 'purposive purposelessness', is not a talent monopoloised by human art but discovered as the productive activity of all life, which, as the reverse face of capitalist half-life, reveals itself in purposeless *conatus* or the purposive purposelessness of persevering in existence. Only within such an open horizon, which should never be confused with indifference to conditions, is it possible for life and art to attain their true purpose, which is to be governed by no ostensible purpose nor adapted to any residual use.□

References:

1 Theodor Adorno, *Aesthetic Theory*, trans. Robert Hullot-Kentor (London: Athlone Press, 1997), p.103.

2 This is the term of black radical feminist Sylvia Wynter, who explains it thus: "There is one profound difference here, however. Rome's empire was *Roman*. Instead, as studies of contemporary neocolonialism as well as of its predecessors colonialism and postcolonialism reveal,

the West, over the last five hundred years, has brought the *whole* human species into its *hegemonic*, now purely secular (post-monotheistic, post-civic monohumanist, therefore, itself also transumptively liberal *monohumanist*) model of being *human*. This is the version in whose terms the human has now been redefined, since the nineteenth century, on the *natural scientific model* of a *natural* organism. This is the model that *supposedly* preexists — rather than *coexists* with — all the models of other human societies and their religions/cultures. That is, all human societies have their ostensibly natural scientific organic basis, with their religions/cultures being merely superstructural. All the peoples of the world, whatever their religions/cultures, are drawn into the homogenizing global structures that are based on the-model-of-a-natural-organism world-systemic order." Sylvia Wynter and Katherine McKittrick, "Unparalleled Catastrophe for Our Species? Or, To Give Humanness a Different Future: Conversations" in Katherine McKittrick, ed., *On Being Human as Praxis* (Durham, NC: Duke University Press, 2015), pp. 21-22.

3 For an account of the philosophical and political implications of quantum physics and the discovery of the 'intra-active' nature of matter, see Karen Barad, *Meeting the Universe Half Way: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007).

4 See Rosi Braidotti, 'Posthuman, All too Human', Durham Castle Lecture Series, Durham University, 25 January 2017, https://www.youtube.com/watch?v=JZ7GnweIrM0&t=3262s

5 Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (Berkeley: University of California Press, 2013), p. 16.

6 Ibid.

7 Ibid., pp. 15-16.

8 Ibid., p. 34.

9 Adorno, op. cit., p. 102.

10 Ibid, p. 107

11 This problem is conceived in numerous ways, from the 'mendaciousness' of illusionistic or harmonious art, to the acquiescence of beautiful art with the status quo, to the privilege or exceptionalism of autonomous art underpinned as it is by the radical unfreedom of all other social production.

12 Adorno, op. cit., p. 103.

13 Ibid., p. 102.

14 Ibid., p. 103.

15 Kohn, op. cit., p. 34.

16 The quote continues: "[…] When power becomes bio-power, resistance becomes the power of life, a vital power that cannot be defined within species, environment or the paths

of a particular diagram." Gilles Deleuze, *Foucault*, trans. Séan Hand (London: Continuum, 2006), p. 77.

17 This is Benjamin Noys' question: see Benjamin Noys, "The Recirculation of Negativity: Theory, Literature, and the Failures of Affirmation", *Stasis* 1, no. 1 (2013) pp. 140-155.

18 Here I am referring to Gilbert Simondon's interrelated concepts of Individuation and transindividuation. In Muriel Combes's explanation: "*Apeiron*, nature indetermined because still nonstructured, is charged with potentials; indetermined is thus not synonymous with *undifferentiated*. Moreover, successive individuations of being do not leave the preindividual unchanged; the share of preindividual nature put to work in collective individuation is something biological individuation has deposited in living beings, but living beings can only gain access to it by *resubmersion* deeper than their vital individuality, for it is prevital reality. The only term that Simondon has to describe this preindividual is *transindividual*, which creates some confusion to the extent that it designates the preindividual deposited in subjects through vital individuation insisting in them, available for subsequent individuation, as well as its mode of existence as reality structured as collective. But it is possible to resolve this difficulty insofar as it is a matter of referring to something whereby any subject, to the extent that it harbors such a share of uneffectuated nature, is already a collective being, which means that "together all individuals thus have a sort of nonstructured ground from which new individuation may be produced"." Muriel Combes, *Gilbert Simondon and the Philosophy of the Transindividual*, trans. Thomas LaMarre, (Cambridge, Mass; London, England: MIT Press, 2013), p. 49.

19 Joseph Beuys, Club 2am, 3sat, 27 January 1983, https://www.youtube.com/watch?v=Mo47lqk_QH0

20 This is Deleuze and Guattari's term to describe the sensations objectified and therefore also autonomised by and in the artwork. See, Gilles Deleuze and Félix Guattari, "Percept, Affect, and Concept," in *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell, (New York: Columbia University Press, 1994), p. 164.

21 Beuys, op. cit. Author's translation.

22 Ana Mendieta, 'A Selection of Statements and Notes', *Sulfur* 22 (1988), p. 70.

23 Mendieta and her sister were sent to America from Cuba as children after Fidel Castro came to power. After several unsuccessful fostering attempts, they found a long-term home in Iowa.

24 Martin Heidegger, 'The Age of the World Picture', in *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New

York: Harper Row, 1977), p.129.

25 'Bare life' is Agamben's term for biological life politicised through its 'exclusive inclusion'. In modernity the situation is reversed into an inclusive exclusion, whereby the *zoë* of citizens becomes the central object of political decision as they are 'included' on the basis of their reduction to bare life: "The entry of *zoë* into the sphere of the *polis* - the politicization of bare life as such - constitutes the decisive event of modernity." See Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, trans. Daniel Heller-Roazen (Stanford, CA: Stanford University Press, 1998), p. 4.

26 In *The Use of Bodies*, Agamben introduces this third hyphenated term, 'form-of-life', to articulate 'life indivisible from its form' (p. 206), a reconciled state of life in which *bios*, or the habits and uses of the body, and *zoë*, the flesh, are united as one living thinking self-affecting form in which neither is fixed.

27 Ibid., p. 213.

28 Ibid., p. 210.

29 Claire Colebrook, cited in Benjamin Noys, 'Vital Texts and Bare Life: The Uses and Abuses of Life in Contemporary Fiction', *CounterText* 1 no.2 (2015), pp. 165-185, p.181.

30 From the Ophiux project webpage, https://www.joeyholder.com/ophiux, 2016.

31 See Cécile B. Evans, *Made with Minds*, 2013: https://www.nowness.com/story/cecile-b-evans-made-with-minds

32 See Agamben, op. cit., p. 171.

33 "If anything characterizes modern democracy as opposed to classical democracy, then, it is that modern democracy presents itself from the beginning as a vindication and liberation of *zoë*, and that it is constantly trying to transform its own bare life into a way of life and to find, so to speak, the bios of *zoë*. Hence, too, modern democracy's specific aporia: it wants to put the freedom and happiness of men into play in the very place — 'bare life' — that marked their subjection." Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, trans. Daniel Heller-Roazen (Stanford, CA: Stanford University Press, 1998), pp. 9-10.

34 Noys, op. cit., p.171.

35 Theodor Adorno, 'Novissium Organum' in *Minima Moralia*, trans. Edmund Jephcott (London: Verso, 1999), p. 229.

Stelarc, Ear on Arm
London, Los Angeles, Melbourne 2006
Photographer- Nina Sellars

STELARC

Contingent and Contestable Futures: Zombie, Cyborg and Phantom Bodies

This adjusted text is structured on a lecture given at the Museum of Contemporary Art in Skopje on the 26th of October, 2019. The lecture was augmented with images and video clips. This collection of ideas was presented in reference to the artist's projects and performances. As a performance artist, you have to take the physical consequences for your ideas. In turn, these ideas are authenticated by the artist's actions. Included are references to some state-of-the-art robotics and quotes from several relevant theorists and philosophers. The text addresses issues of aliveness, embodiment, agency and identity.

The more and more performances I do, the less and less I feel I have a mind of my own, nor any mind at all in the traditional metaphysical or cognitive scientific sense. A zombie is a body without a mind of its own, a body that performs involuntarily. A cyborg is a hybrid human-machine system that is becoming increasingly automated. We fear the involuntary and are anxious about becoming automated, but we fear what we have always been, zombie bodies, and what we have already become - prosthetically augmented, cyborg bodies. This is not about the philosophical zombie body but rather the physiological zombie body.

IN AN INCREASINGLY VIDEO, VIRTUAL AND VICARIOUS WORLD THE BODY ASSERTS ITS MATERIALITY NOT AS A SITE FOR THE PSYCHE NOR FOR SOCIAL INSCRIPTION BUT A SITE TO BE SCULPTED. THE BODY NOT AS AN OBJECT OF DESIRE BUT AS AN OBJECT THAT REQUIRES REDESIGNING.

The possibility of hacking the body is becoming an increasing concern. The Body Modification movement and the Grinder community best exemplify experimentation with body form and, in the near future, with body function. Split tongues, split penises, silicon and horn implants, bagel head inflations, metal body piercings, skull screws and sub-dermal implants of chips and LEDs are proliferating, not to mention the open source Biopunk movement that alludes to genetic intervention facilitated by CRISPR gene editing technology. Notions of Neurohacking are becoming more feasible too, with increasing chemical experimentation and electronic brain implants, initially for pathological and medical reasons. The problem now becomes not freedom of ideas but rather freedom of form, freedom to modify your body. Adjusting your body architecture might result in adjusting the awareness and function of your body in the world.

Between 1973 and 1975 three films were made of the inside of my body, into the stomach, the left and right bronchi of the lungs, and into the colon using endoscopic equipment – not for any medical reason but purely as an aesthetic gesture. A total of three meters of internal space was probed. The body is experienced not merely as bounded by skin, as an external surface, but rather as an internal architecture of tissue and body structures, empty cavities, spaces and circulatory and nervous systems.

The body is a soft and unstable construct, its form and functions probed and extended, erasing the distinctions between internal and external. It is traumatized and ontologically troubled with its limited longevity, vulnerability and slim survival parameters. The only strategy is to perform with indifference. There's a time when thinking has to stop and action needs to begin. The body performs with a posture of indifference. By indifference I mean as opposed to having expectations – to allow the performance to unfold in its own time with its own rhythm. The performance is certainly structured but not scripted.

Between 1976 and 1989, twenty-seven performances were realized with hook insertions into the skin. The body was suspended in different positions, in varying situations and in private spaces and remote locations. In the *Event for Amplified Tension* performance at Tenjo Sajiki, Tokyo in 1979, the body was suspended within a tensegrity icosahedron, held by the tension of the cables. Cutting a cable collapses the structure. The body was suspended for 25 minutes, during

which its heartbeat and bloodflow was amplified. With the *Up / Down: Event for Shaft Suspension* at Hardware Street Studios, Melbourne in 1980, the body was hoisted up and lowered down an abandoned lift-well. The performance could be seen at each floor level, as well as by looking up from the basement and looking down from the top of the shaft. In the Tamura Gallery performance, *Sitting / Swaying: Event for Rock Suspension* in Tokyo in 1980 the body was suspended, counter-balanced by a ring of rocks. The body was gently swaying, generating random oscillations in the rocks. The performance ended when the telephone rang in the gallery. The performance *Seaside Suspension: Event for Wind and Waves* was realized in Jogashima, Miura in 1981 on an outcrop of rocks 300m from the shore. The body was suspended side-on, looking out to sea. The weather was overcast and the wind was blustery. Some fishermen on another outcrop of rocks were fishing before we arrived - they kept fishing during the performance and were still fishing when we left.

THE SUSPENSIONS ARE EXPERIENCES IN BODILY SENSATION, EXPRESSED IN BODILY ACTION, IN REMOTE SPACES AND IN DIVERSE SITUATIONS. THEY ARE NOT ACTIONS FOR INTERPRETATION, NOR REQUIRE ANY EXPLANATION. THEY ARE NOT MEANT TO GENERATE ANY MEANING; RATHER THEY ARE SITES OF INERTIA AND STATES OF ERASUR.

In *Remote-Controlled Suspension*", MOCA Brisbane in 1988, the body was suspended vertically from a gantry crane. This was not only an up and down suspension. With control panel in hand, the body was able to propel itself forwards, backwards, sideways left and right. Stopping and starting suddenly generated swinging, which was an unexpected addition to the choreography. The performance began when the body lifted itself up and ended when the body was touched down. With the *Street Suspension* over E. 11th Street, East Village in 1984, the body was rigged up in a fourth floor room. When everything was ready

the body rolled out of the window and ended up over the middle of the street. The body had a good view of the police cars that arrived from all directions. It was meant to be a 30-minute performance but it was stopped after only 12 minutes when the body was pulled back into the building by the police. The arrest was not for a display of public nudity, nor for performing some sado-masochistic act, but rather for being a danger to the public – in case I had fallen onto a spectator below. The *City Suspension* performance was above the Royal Theatre in Copenhagen in 1985. The body was hoisted up from street level by a large crane to almost 60 meters high above the Royal Theatre in Copenhagen. It was then rotated 3 times before being lowered down again. After 30 meters in height the body could not hear any street sounds from below. All the body could hear was the whooshing of the wind, the whirring of the crane motors and the creaking of the skin.

THE SUSPENSION PERFORMANCES EXPOSED THE BODY'S VULNERABILITY. IN THIS INCREASINGLY COMPLEX TECHNOLOGICAL TERRAIN OF PRECISE AND POWERFUL MACHINES, THE BODY IS NOT ONLY INADEQUATE BIOLOGICALLY AND PHYSIOLOGICALLY BUT IS PROFOUNDLY OBSOLETE.

Having explored the psychological and physiological parameters of the body, there was a desire to augment the body with technology. The *Third Hand* was my first body augmentation. The *Third Hand* capabilities include a pinch-release, grasp-release, and 300-degree wrist rotation (CW and CCW). It has a tactile feedback system for a rudimentary sense of touch. The mechanism is actuated by EMG (electrical signals) from the abdominal and leg muscles. Initially, the Third Hand was merely a visual attachment of the body for performance. There was an interplay and counterpoint of hand mechanism motions and bodily limb movements in various spaces and situations. But there was also a desire to perform an action that was not merely aesthetic and formal but also indicative of some

extra-utilitarian act. In *Handswriting* at the Maki Gallery, Tokyo in 1982, the body is writing one word, each hand writing a separate letter at the same time. You had to keep your two eyes on what your three hands were doing. Because of the spacing of the three hands you had to write every third letter before moving the three hands to the next position. So you had to remember the sequence of letters you were writing. And because this is performed on a sheet of glass between the artist and the audience, it had to be written back to front. Only two words were written in this way, 'Evolution' and 'Decadence', as both are nine-letter words.

A PROSTHESIS NOT AS A SIGN OF LACK BUT RATHER A SYMPTOM OF EXCESS. MCLUHAN OBSERVES THAT TECHNOLOGY CONSTITUTES THE EXTERNAL ORGANS OF THE BODY. BUT AS TECHNOLOGY BECOMES INCREASINGLY BIOCOMPATIBLE IN BOTH SCALE AND SUBSTANCE, IT CAN BE ATTACHED AND INSERTED INSIDE THE BODY. TECHNOLOGY IS NO LONGER A CONTAINER BUT A COMPONENT OF THE BODY.

With the *Amplified Body, Laser Eyes and Third Hand* performance in the Maki Gallery, Tokyo in 1985, laser beams were directed to the eyes via optic fiber cables. By manipulating the muscles around the eyes, the body is able to scribble images in the space. Instead of the eyes being passive receptors of light and images, here the body becomes an active transmitter of light that generates its own images. The body's brainwaves, heartbeat, blood-flow and muscle signals are acoustically amplified. The bodily human form becomes acoustically transformed into the gallery cuboid space. The performance begins when the body is switched on and the performance ends when the body is switched off.

IN AN AGE OF MIXED REALITIES, THE BODY PERFORMS BEYOND THE BOUNDARIES OF ITS SKIN AND BEYOND THE LOCAL SPACE IT INHABITS, EXTRUDED INTO NON-PLACES AND TASK ENVELOPES OF VIRTUALITY. EXTRUDING ITS SENSE OF SELF, THE

BODY EXPERIENCES ITSELF AS EMPTY, NOT AN EMPTINESS FROM ANY LACK BUT RATHER AN EMPTINESS THROUGH EXCESS. THE BODY HAS BECOME A CONTEMPORARY CHIMERA OF MEAT, METAL AND CODE.

The *Extended Arm,* Melbourne and Hamburg 2000, is an eleven degree-of-freedom pneumatically actuated mechanism that extends the right arm to primate proportions. It adds an extra joint to the arm and its capabilities include wrist rotation, thumb rotation and individual finger movements with each finger splitting open. Each finger can then become a gripper in itself. But whilst the right arm is extended, the left arm performs involuntarily, actuated by a pre-programmed muscle stimulation system. The performance for *Mutalogues*, Avignon in 2000 was for 4 hours continuously with video streaming. A 3D model of the mechanism mimicked the movements of the hand manipulator online. The body performed with its shadow and its image with the generated video feedback.

As well as the body actuated to perform involuntarily in a local space, the body was also remotely animated. For *Fractal Flesh*, Telepolis, Luxembourg in 1995, people in the Pompidou Centre in Paris, the Media Lab in Helsinki and the Doors of Perception Conference in Amsterdam were able to access and animate the physical body with a 6-channel muscle stimulation system. Using a touch-screen interface, the 3D model simulates the programmed movements and a second later in Luxembourg, where the body was, the body moves involuntarily. This was a split body experience (not a split mind-body, but a split physicality), with voltage-in on the RHS generating involuntary motion and voltage-out on the LHS of the body activating a *Third Hand*. The body was not "all-here" now, nor then, but "partly-here" and "partly-there", sometimes and all-the-time, everywhere. With *Ping Body*, first performed at Artspace in Sydney in 1996, the body is actuated not by people in other places but rather by internet activity. Using the Ping Protocol, 40 global locations are pinged and the reverberating signals are measured in

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AMPLIFIED BODY
  1.  EEG (BRAINWAVES)
  2.  POSITION SENSOR (TILTING HEAD)
  3   NASAL THERMISTOR
  4.  ECG (HEARTBEAT)
  5.  EMG (FLEXOR MUSCLE)
  6.  CONTACT MICROPHONE (HAND MOTORS)
  7.  PLETHYSMOGRAM (FINGER PULSE)
  8.  KINETIC ANGLE TRANSDUCER
  9.  POSITION SENSOR (BENDING LEG)
  10. EMG (VASTUS MEDIALIS MUSCLE)
  11. ULTRASOUND TRANSDUCER
      (RADIAL ARTERY BLOODFLOW)
  12. POSITION SENSOR (LIFTING ARM)
INVOLUNTARY BODY
  13. STIMULATION RHS BICEPS
  14. STIMULATION LHS DELTOIDS
  15. STIMULATION LHS BICEPS
  16. STIMULATION LHS FLEXORS
  17. STIMULATION LHS HAMSTRINGS
  18. STIMULATION LHS CALVES
THIRD HAND
  A.  GRASP/PINCH (CLOSE)
  B.  RELEASE (OPEN)
  C.  WRIST ROTATION (CW)
  D.  WRIST ROTATION (CCW)
  E.  TACTILE FEEDBACK
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STELARC
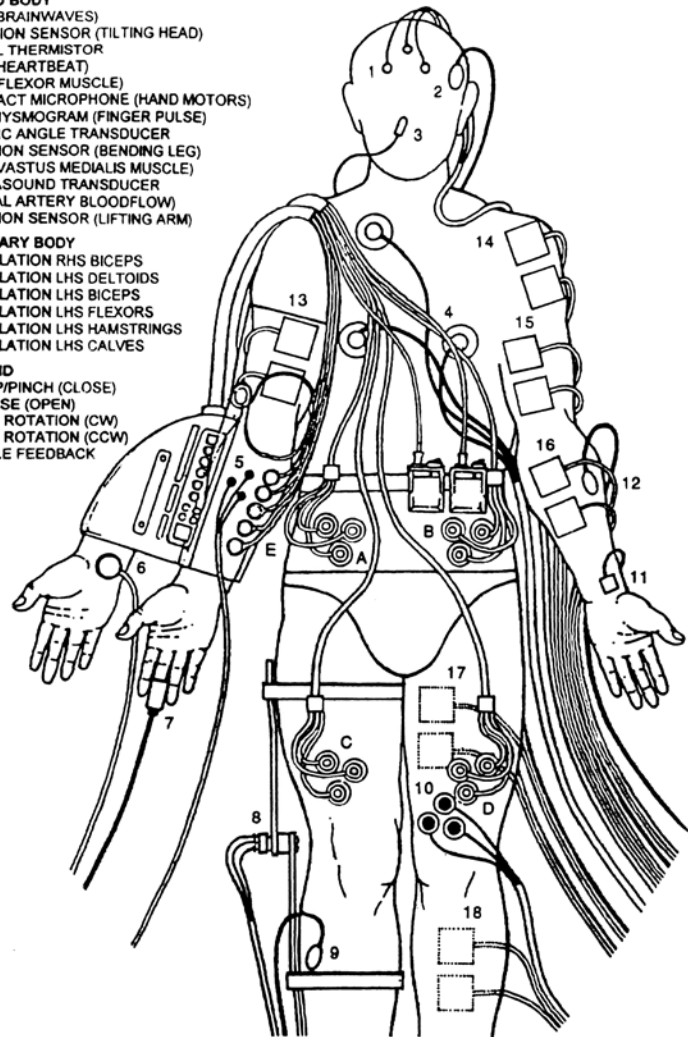
INVOLUNTARY BODY / THIRD HAND

Stelarc, Involuntary Body / Third Hand
Yokohama, Melbourne 1990
Diagram- Stelarc

milliseconds and mapped to the body's muscles. The body becomes a crude barometer of internet activity. *Parasite* was another internet performance, streamed live. A customized search engine scans the net, selects anatomical images, and I see them in the HUD (heads-up display). The complexity of the image is analyzed and mapped to the muscles. The anatomical images that you see are the images that move your body. The search engine also extracts snippets of sound from the net and plays them resulting in an immersive acoustical environment. In the

performance at NTT / ICC, Tokyo in 1997, tilt sensors on the head, arms and legs allow the body to also become a video switcher and video mixer of the aesthetic surveillance system of streamed video. In being animated involuntarily, the body inadvertently composes its own visual performance whilst actuating its third hand by EMG muscle signals.

THE BODY BECOMES AN END-EFFECTOR OF OTHER BODIES IN OTHER PLACES AND FOR MACHINES ELSEWHERE. THESE PROJECTS ARE ABOUT

ALTERNATE ANATOMICAL ARCHITEC-TURES THAT GO BEYOND BIOMIMICRY.

The *Ambidextrous Arm* was initiated at Brunel University as a collaboration between the School of Art and with Design and Engineering in 2013. It is an on-going research project. The human-like manipulator is a dexterous, double-joint-ed mechanism actuated by a bundle of pneumatic rubber muscles. The fingers can bend one way, the thumb can rotate around, emulating a right hand, but the fingers can completely bend the other way and the thumb can rotate backwards emulating the functions of a left hand. It is a right hand and a left hand all in one. If you were an amputee, why not replace your lost right hand with an ambidextrous hand? Sometimes two left hands might better complete a task than a left hand and a right hand. The intent was also that the ambidextrous hand would have a webcam in its palm, creating an "eye-in-hand" manipulator.

THE BODY IS MODIFIED BIOLOGY, ACCELERATED AND AMPLIFIED BY MET-AL, WITH A SPEED THAT FAR EXCEEDS ITS METABOLIC AND MUSCULAR CAPA-BILITIES. ITS SENSORY EXPERIENCE IS DISTRIBUTED AND SHARED. IT IS A CHI-MERA ADJUSTED IN FORM AND FUNC-TION, ITS COGNITION EXTENDED WITH COMPUTATIONAL CODE.

As well as manipulators there has always been an interest in insect and animal-like locomotion. In 1997, during my artist-in-residence position in Ham-burg city, with the assistance of f18 the *Exoskeleton* 6-legged walking machine was engineered. It is robust enough to support the artist. The leg movements are selected by the arm gestures of the artist and the controller. It can move for-wards and backwards with a ripple gait, side-ways with a tripod gait. It can sit and stand and can turn on the spot. As well as a walking machine it is also a sound ma-chine. The mechanical walking sounds, the pneumatic sounds and solenoid clicks, are augmented with synthesized sounds trigged by the control signals. The 2003 *Muscle Machine*, engineered

Stelarc, Third Hand
Roppongi Studios, Tokyo 1983
Photographer- Toshifumi Ike

at Nottingham Trent University, was a walking machine that translates human bipedal gait into a 6-legged, insect-like locomotion. Encoders at my leg joints en-abled control of the machine locomotion. Lifting one leg up lifted and swung for-ward 3 machine legs, so stepping up and down generated the machine propulsion. The *Walking Head* robot, Melbourne, engineered in Hamburg in 2006, is an autonomous and interactive two-meter diameter 6-legged walking robot. A ro-tating ultra-sound sensor mounted on its chassis detects if anyone is standing in front of the robot. If so, it selects from its library of possible movements and performs a simple choreography. It then sits down, goes to sleep and waits for the next person to come along. The intent was to engineer an actual-virtual system where the mechanical movements of the legs modulate the facial expressions of the displayed head. The *Microbot* project has never been realized. The idea, only visualized as an animation, is to engi-neer an insect-like robot robust enough to climb up my tongue into my mouth. I would have to be careful not to swallow. The project is an aesthetic gesture to the increasing intimacy with our machines. As our technology is increasingly mi-cro-miniaturized and nano-scaled, it can inhabit the human body itself. In fact, all technology in the future might be invisi-ble because it is inside the human body,

augmenting its bacterial and viral popu-lation. Not only can nano-scale sensors detect, monitor and target pathological conditions inside the body but, more in-terestingly, imagine that a body might be redesigned, atoms up, inside-out. The changes would happen invisibly, so mi-nutely, so incrementally that you would not discern the transformation at all until the changes surface to skin level.

Biomimicry has proven instructive in engineering new robot architectures. Studying insect and animal locomotion and manipulation has resulted in de-signing useful robots. But translating the form and function of living creatures into robots often transforms them and results in unexpected utilitarian functions. In studying live snakes, Shigeo Hirose at Tokyo Institute of Technology engineered a robotic snake. A snake is interesting in that it is a simple chord structure yet it can slither along with horizontal sinusoi-dal motion and also can become a grip-per, wrapping itself around its prey. The robotic snake though had possible func-tions such as a modular lunar vehicle, an animated fireman's hose and even a more flexible, miniature endoscope. Combining wheels and legs in the "whegs" robots, like *RHex*, from the University of Penn-sylvania, can move very fast over flat surfaces but can also clamper up stairs and over obstacles. And because its "whegs" are also springy it can perform

Stelarc, Propel
DeMonstrable- Autronics, Lawrence Wilson Gallery, Perth 2016
Photographer- Steven Aaron Hughes
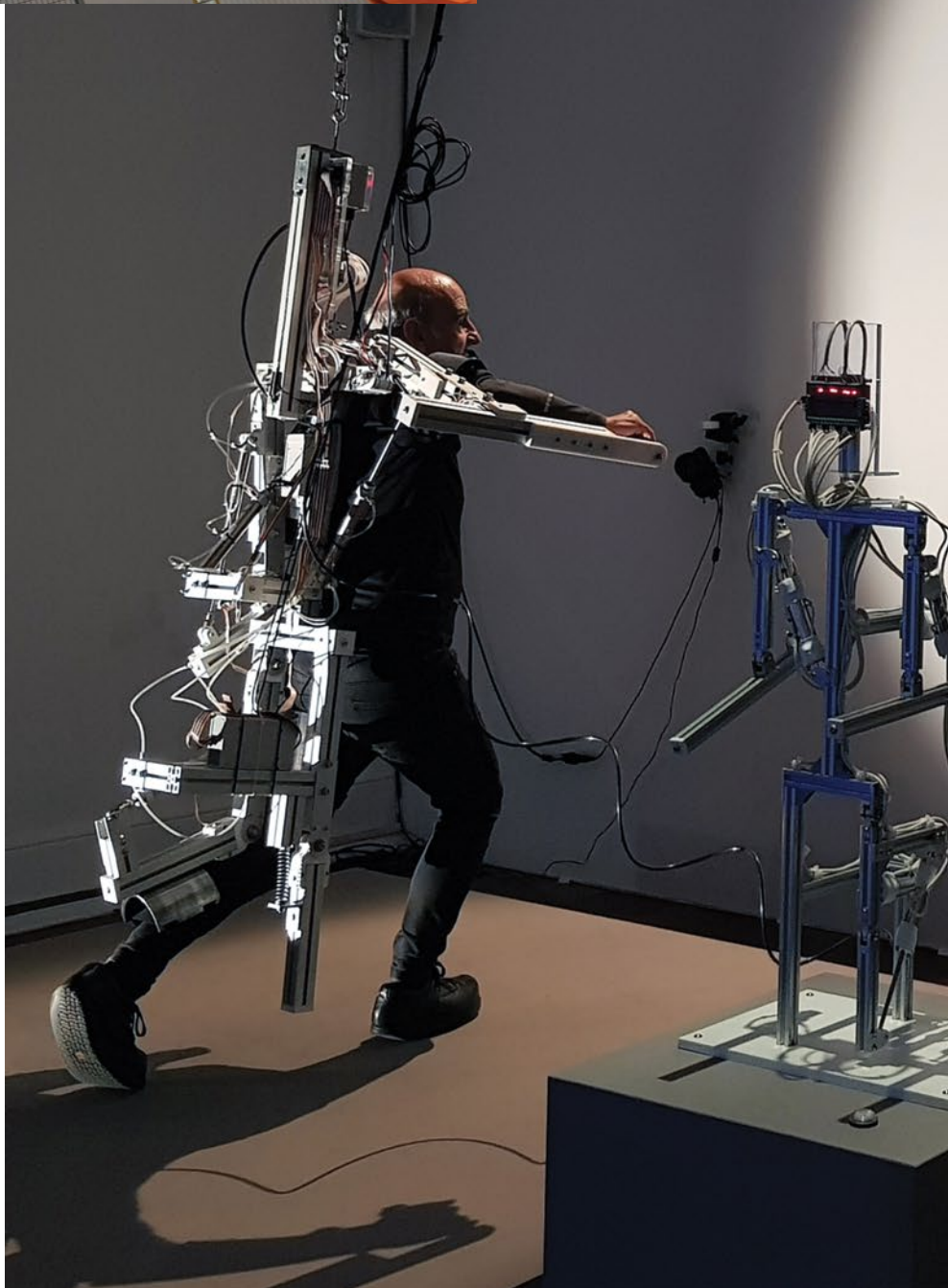
Stelarc, StickMan
HyperPrometheus,
Perth Institute of Contemporary Art, Perth 2018
Photographer- Steven Aaron Hughes

more robust feats like leaping high. The Boston Dynamic 4-legged robots have a seductively dog-like gait, but with a neck that also becomes a five degree-of-freedom arm and manipulator that can open doors. With stereo and depth cameras it has nimble indoors operation. The 75 kg *Atlas* robot is a humanoid robot which has 28 degrees-of-freedom and is compact and coordinated. It performs athletically, being able to somersault and land on its feet and retain its balance even when jostled. There are reasons why we would still engineer human-like robots. David Hanson's *Diego* robot head created for the Machine Perception Lab at the UCSD Institute for Neural Computation, has 32 micro-motors embedded in its soft and flexible skin which generate a vocabulary of facial behaviour and a strong sense of aliveness. We have evolved hard-wired to respond to facial expressions and to feel empathy, so a robot that can simulate emotion is a much more seductive interlocutor. But as our robots become more and more human-like, there is the issue of the Uncanny Valley. Is this a philosophical barrier to engineering more human-like robots or is it more a problem of state-of-the-art technology? I suspect it is the latter. Anyway, we know that the problem is not only about creepy robots. There are creepy people in the world. If I am socially awkward, if I have a stammer, if I am schizophrenic then I seem a creepy person to others. So even if a robot looks human in appearance, if it does not respond and act in the way we expect it to, if it speaks strangely, if its expressions and gaze do not synchronise, then there will be an uneasy feeling interacting with it.

In our relationships with robots we need to re-evaluate what it means to have agency and what it means to be intelligent. The nostalgia for the human is misplaced.
NIETZSCHE - ". . . there is no being behind doing, effecting, becoming; "the doer" is merely a fiction added to the deed—the deed is everything."
WITTGENSTEIN - the assertion that thinking is not located inside the head but is located on the paper on which

you write or on the lips with which you speak…

Stretched Skin, at Scott Livesey Galleries, Melbourne in 2009 is a 4m X 3m photo installation displayed not on the wall but horizontally 30cm above the floor. Spotlit from above it appears as a flattened floating face – a landscape of stretched skin. Originally the flattened face was made for the *Prosthetic Head* project – skin that could be wrapped around a 12,000 polygon mesh to produce a 3D model of the artist's head for an embodied conversational agent. But now you can produce an instant, hyper-real skin by either scanning or photogrammetry. Mark Sagar's research at the University of Auckland explores how a virtual infant, Baby X (modelled after his own baby daughter) can learn by a show-and tell-approach. The 3D model has adequate morph targets that generate convincing facial expressions. It is a combination of a high fidelity 3D model, neurophysiology and cognitive sciences to exhibit awareness, curiosity and attention behaviour as well as adequate lip syncing to speak appropriate answers. In other words it is an embodied conversational agent with a virtual nervous system. At the audio/visual of a screen surface it will be increasingly difficult to discern whether what you are conversing with is an actual or simulated human at the other end.

SCREENS BECOME SKINS THAT NOW ATTAIN AN OPTICAL AND HAPTIC THICKNESS. IT IS THIS THICKENING THAT COLLAPSES THE PSYCHOLOGICAL SPACE BETWEEN THE VIRTUAL ENTITY AND ITS HUMAN INTERLOCUTOR. SKINS AS SCREENS EXHIBIT SEDUCTIVE VOCABULARIES OF BEHAVIOUR.

This is an age of *Circulating Flesh* where we can extract organs from one body and insert them into another body,where we can detach a hand from a dead body and animate it on the arm of an amputee. Stem cells replicated in-vitro are re-injected and repair tissue in-vivo. Stem cells can become skin and muscle cells. And we can take the skin

cell from an impotent male and turn it into a sperm cell. And more intriguingly we can take the skin cell from a female body and turn it into a sperm cell. Wombs from a deceased donor that would last the full term of a pregnancy will soon be able to be implanted into a patient. And further, if a foetus can be sustained in an artificial and external womb, then a body's life would not begin with birth – nor necessarily end in death, given the replacement of the malfunctioning parts. Birth and death, the evolutionary means for shuffling genetic material to create diversity in our species and for population control, will no longer be the bounding of our existence. Our analogue development, deterioration and death is unnecessary. It is also an age of *Fractal Flesh*. Of bodies and bits of bodies, spatially separated but electronically connected, generating recurring patters of interactivity at varying scales. That's just a definition of the internet. And it is also a time of *Phantom Flesh*. The body increasingly experiences itself as its phantom – a phantom not as in a phantasmagoria but as a phantom limb.

TO OTHERS ONLINE, THE BODY APPEARS FLICKERING ON AND OFF, AS DIGITAL NOISE, AS A GLITCH IN BIOLOGICAL AND EVOLUTIONARY TIME. THE BODY INCREASINGLY OSCILLATES BETWEEN ITS PHYSICAL FORM AND ITS ONLINE PHANTOM. THIS OSCILLATION IS THE QUICKENING COUPLED WITH THE OPTICAL THICKENING THAT FUSES THE PHYSICAL AND THE PHANTOM.

In 1993, for the Fifth Australian Sculpture Triennale whose theme was site specific works, a sculpture was designed and engineered for the inside of the body, for the inside of my stomach. Closed, the *Stomach Sculpture*, becomes a capsule that can be inserted down the oesophagus into the stomach, inflated with air to enable safe occupancy. Inside the stomach, the sculpture could open and close, extend and retract, it had a flashing light and a beeping sound. Open, its size approximates the size of a fist. The sculpture is not for a public space but for a private, physiological space. The

body is not a site for the psyche nor for social inscription but rather a site for a sculpture. *Blender* was a collaboration with another artist, Nina Sellars. Both artists underwent liposuction operations to extract 4.6 litres of their biomaterial. This was inserted into an installation that was anthropomorphic in size. Proximity sensors were embedded in the chassis of *Blender*. When anyone gets close, the blender blades are triggered to mix the biomaterial from the two artists' bodies. This was the inverse of the Stomach Sculpture. Instead of machine choreography inside a soft and wet environment, here a machine installation becomes the host for a liquid body composed of biomaterial from two artists' bodies.

Face transplants, now for purposes of repairing damaged heads with plastic surgery, will soon initiate face transplants for cosmetic reasons. The face from the donor body, stitched to the skull of the recipient becomes a third face, resembling neither. In the *Partial Head* project, Melbourne and Perth 2006, the artist's face was scanned, as was a hominid skull. We then did a digital transplant resulting in a composite human-hominid face, effectively one that is post-hominid and pre-human in form. The 3D-printed polymer scaffold was seeded with living cells, growing a layer of living skin. The face was immersed in nutrients in a custom-engineered incubator at 37 degrees centigrade. It got contaminated within days and the specimen had to be fixed in formaldehyde for the remainder of the exhibition. The *Partial Head* is a partial portrait of the artist that was partially living for a short amount of time.

THE BODY YOU ARE BORN WITH IS NO LONGER THE BODY YOU WILL DIE WITH.

The *Extra Ear* was first imaged as an ear on the side of the artist's head. This was a dumb anatomical site to construct an extra ear. No surgical assistance to realize this was possible because of the possibility of partial face paralysis. It took 10 years to find three surgeons and to get adequate funding to begin what had now become the *Ear on Arm* project, London,

Los Angeles, Melbourne in 2006. When the ear scaffold is inserted beneath the skin and the skin is suctioned over the scaffold, over a period of approximately six months you get tissue ingrowth and vascularization occurring. The porous biopolymer scaffold encourages cells to populate it. The ear construct becomes fused to the arm and becomes a living part of the body. At the end of the second surgery, a microphone was inserted into the ear construct. Even with a partial plaster cast, even with bandages wrapped around the arm and even with the surgeon wearing a face mask, his voice was picked up and wirelessly transmitted. In other words the ear has been replicated, relocated and sometime soon will be electronically augmented and rewired to internet-enable it. The *Ear on Arm* is not for the artist; rather it becomes a remote listening device for people in other places.

The *Ear on Arm* project has generated other projects, including a four-metre long sculpture of the ear on the arm. This was laser cut from dense foam with a urethane skin to make it more robust. It was exhibited amongst rocks at the seaside for the Lorne Sculpture Biennale in 2011. A performance was also planned. The *Ear on Arm Performance* involved the body simply lying on the sculpture, covered with a white slip, visually blending them together. But whilst on the sculpture it became apparent that what would be really interesting would be to suspend the body over the sculpture. This was realized as the *Ear on Arm Suspension* at the Scott Livesey Galleries in Melbourne in 2012. When the cable took the full weight of the body, because it was braided it untwisted, slowly spinning the body one way and then the other. What was planned to be a five-minute performance took 15 minutes to stop spinning. Fortuitously, the body stopped spinning in approximately the same orientation as it was lifted off. The performance began when the body was hoisted up and ended when the body was lowered down. This was a counterpoint between a whole physical body and a much larger fragment of the body – an ear on an arm.

In the *Propel* performance for *De-*

monstrable in Perth in 2016, the body was attached to the end of an industrial robot arm. Ordinarily it is not safe even to be within the task envelope of the robot and it proved very difficult to realize this performance. The body's position/orientation, trajectory and velocity had to be precisely programmed. After the 30-min performance the body was replaced by a large sculpture of the artist's ear and the same choreography was performed. The robot that choreographs the ear is the same robot that carved the ear.

COUPLED AND COMPLICIT WITH TECHNOLOGY, THE BODY BECOMES AN EXTENDED OPERATIONAL SYSTEM OF HUMAN METABOLISM AND MACHINE MUSCULATURE. THERE WAS ALWAYS A GHOST IN THE MACHINE, NOT AS A VITAL FORCE THAT ANIMATES, BUT RATHER A FADING ATTESTATION OF THE HUMAN.

StickMan is a minimal but full-body exoskeleton that is pneumatically actuated. It was originally performed as part of the *Deadalus Project* in Perth in 2017. The body was algorithmically and involuntarily actuated in a five-hour performance. With its right leg free to pivot and retain its balance it can manipulate its large shadow and modulate the video feedback of the performance. Sensors on the StickMan generate signals that acoustically amplify the movements and immerse the audience in the performance. Recently, a miniStickMan was engineered that enables the audience to insert their own choreography into the performance by manipulating its limbs and pressing the play switch – a kind of electronic voodoo.

Some ideas are important in understanding our contemporary relationships with technology. These include Bruno Latour's Actor Network Theory (ANT), Graham Harman's Object Oriented Ontology (OOO), coupled with the Internet of Things (IOT), all of which contribute in generating flattened ontologies where the primacy of human existence is rejected. In Actor Network Theory, all entities in a network are treated equally and all essentialist qualities are done away with.

Differences are generated in the network of relations. Object Oriented Ontology asserts that objects cannot be reduced to their components nor to their relations or effects. Rather than negating meaning, it generates new kinds of relationships and sensibilities in a world we come into that is already populated by diverse, distributed and connected objects. And as physical objects are increasingly embedded with sensors and circuitry, objects increasingly communicate with other objects as well as with people. Objects become smarter in a world where people are increasingly manipulated and pacified.

"Wholes subscend their parts, which means that parts are not just mechanical components of wholes, and that there can be genuine surprise and novelty in the world, that a different future is always possible".
-Timothy Morton, Humankind: Solidarity with Non-Human People

The *ReWired / ReMixed: Event for Dismembered Body* was performed for the *Radical Ecologies* exhibition at the Perth Institute of Contemporary Art in 2017. For five days, six hours every day, the body could only see with the eyes of someone in London, could only hear with the ears of someone in New York, whilst anyone anywhere could access online the artist's right arm via the exoskeleton and choreograph its movements. The exoskeleton arm is a six degree-of-freedom arm that is both controlled by a touch screen in the gallery and online as a 3D model. For five days there was an out-sourcing of people's visual and acoustical senses and a sharing of agency. The body is simultaneously a possessed and performing body. Not a split mind and body, but a split physical and fraught body.

THE BODY INCREASINGLY OCCUPIES LIMINAL SPACES OF ERASURE AND EMPTINESS. THE EXTRUDED SELF AND THE HOLLOW BODY INVITE NEW POSSIBILITIES AND CONTESTABLE FORMS. AN OBJECT THAT REQUIRES REIMAGINING, REWIRING AND RE-DESIGNING. THE PHYSICAL IS FUSED WITH THE COMPUTATIONAL.

We can now preserve cadavers indefinitely using plastination and we can sustain comatose bodies on life-support systems, whilst cryogenically preserved bodies await re-animation at some imagined future time. Dead bodies need not disintegrate and near-dead bodies need not die. The dead, the near-dead, the brain dead, the yet to be born, the partially living, the prosthetically augmented and synthetic life all now share a material and proximal existence with other living bodies, microbial life, operational machines and executable and viral code. And if we can print bodily organs, if we can stem-cell grow them as well, then we will have an excess of organs, of organs awaiting bodies, of Organs Without Bodies.

AND NIETZSCHE REMINDS US THAT THE LIVING ARE ONLY A SPECIES OF THE DEAD.

A few years ago the first baby was born to a 25-year-old mother from a donated 24-year-old frozen embryo – a record duration between donation and delivery. "If the baby was born when it was supposed to be born, we could have been best friends," Tina Gibson, from Tennessee, *told NBC News*. The embryo from another, animated in the body of the recipient. the embryo being conceived a year before the mother was born. It is quite plausible that a frozen embryo can be kept viable for 50 years. If so, you might be born on the deathbed of your twin and long after your mother has passed away. So what is happening is the de-synchronization of biological reproduction with individual existence, a collaboration of remote bodies, between generations.

In 2011 at the Texas Heart Institute in Houston, William Cohn and Bud Frazier implanted the first twin turbine heart into the chest of a terminally ill patient, Craig Lewis. The patient lived long enough to test the new artificial heart which is smaller and more robust than previous ones. What is interesting is that it circulates the blood without pulsing. In the near future, then, you might rest your head on your loved one's chest. They are warm to the touch, they are speaking, they are sighing, they are breathing. They are certainly alive. But they have no heartbeat…

RATHER THAN PREDICT THE FUTURE, WE CONTINUOUSLY CONSTRUCT IT – WITH NEITHER NOSTALGIA FOR THE HUMAN NOR DESIRE FOR THE ALIEN. THE FUTURE DOES NOT UNFOLD THROUGH SOME NECESSITY. RATHER THE FUTURE SHOULD ALWAYS BE OF CONTINGENCY AND ALWAYS BE CONTESTABLE. WILLIAM GIBSON OBSERVES THAT THE FUTURE IS ALREADY HERE, IT IS JUST NOT EVENLY DISTRIBUTED.□
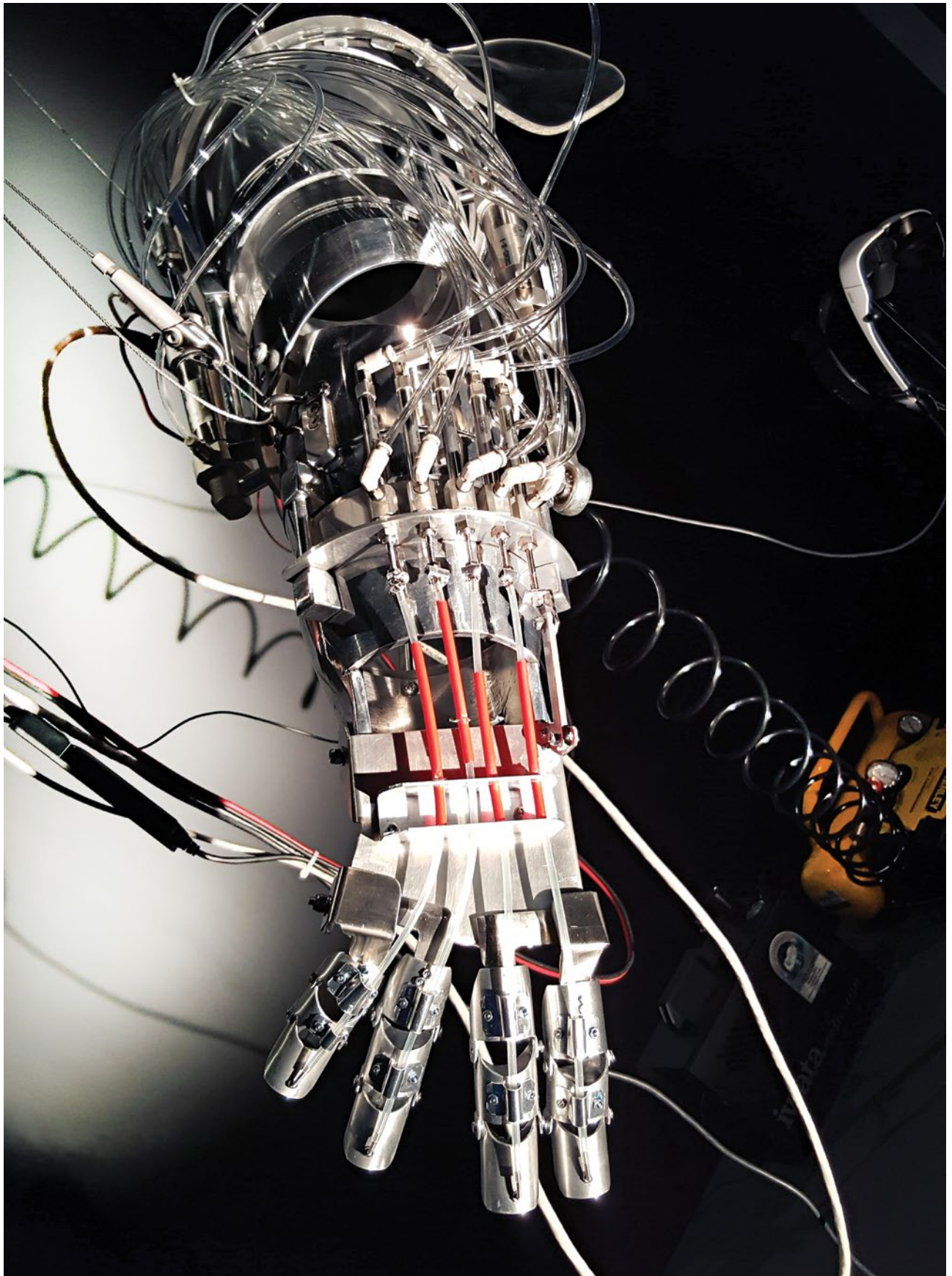
Stelarc, Exoskeleton Arm
Radical Ecologies, Perth Institute of Contemporary Art, Perth 2017
Photographer- Steven Aaron Hughes

Extending and creating new corporealities

Interview with STELARC by Tihomir Topuzovski

Stelarc, Presentation CONTINGENT AND CONTESTABLE FUTURES: ZOMBIE, CYBORG AND PHANTOM BODIES, Museum of Contemporary Art Skopje
Photo: Mila Gavrilovska

Tihomir Topuzovski: Your artistic work is spreading across several disciplines and extending the capabilities of the human body and the notion of the human. Would you try to give a definition of your work?

Stelarc: I've always been a performance artist, ever since I realized I was a bad painter in art school, ha, ha. I am generally interested in evolutionary structures, living entities and comparative anatomies - how the human body, animals and insects sense differently, become aware and interact in the world. How their physiological apparatus generates a unique umwelt of the world. But the human body augmented with technology is capable of alternative anatomical architectures, thus adjusting and extending its understanding of existence. The body has

now become a contemporary chimera of meat, metal and code performing in mixed realities.

As for the projects and performances, these create experiences and ideas to interrogate - a means of re-imagining and re-configuring. Rather than a linear and logical development there has always been an oscillation of concern between biology, technology and virtual systems from the very beginning. I filmed the internal spaces of my lungs, stomach and colon (3 metres of visual probes between 1973-1975) before the first suspension performance in 1976. And the engineering of the Third Hand project begins before the first suspension. In a performance with my virtual body, the Third Hand was used as well in dangerous proximity to an industrial robot arm. So

there is simultaneously an interest in the physical body, its instrumental augmentation both in proximal and remote operation and virtual interactivity. If you want to suspend your body, if you want to insert a sculpture inside your stomach, if you are want to construct an ear on your arm, if you want to perform attached to the end of an industrial robot arm, then as a performance artist you have to take the physical consequences of your ideas. You are not expressing yourself in images or inanimate objects. You have to confront the possibility of bodily damage or psychological trauma. To enable these actions, you perform with a posture of indifference. Indifference as opposed to expectation. You allow the performance to unfold in its own time, with its own rhythm and with its own consequences.

Cyborg constructs are no longer only the medical and military traumatized body with replacement parts or the Manga body of wearable exoskeletons. In fact all technology of the future might be invisible because it is inside the body. What of a modified body invaded by nano-sensors and nano-machines that not only monitor its internal pathology but might redesign the body, atoms-up, inside-out? It would happen so incrementally, so invisibly, that the body would not even sense its metamorphosis. And perhaps the future of intelligence will not be about bodies and machines but rather viral entities imbued with artificial intelligence that replicate, communicate and contaminate electronic media and the internet at the speed of light? Artists generate contestable futures - possibilities that can be performed, experienced, interrogated and possibly appropriated but most likely discarded.

Tihomir Topuzovski: How has your enquiry of direct experience with your own body over decades of performances changed? Since a body is subject to time-bound deterioration, how has this fact determined your approach and the questions raised in these projects?

Stelarc : Up till now the condition of this 73-year-old body has not been constraining in actualizing its ideas. In 2012, I realized the Ear On Arm Suspension (suspended with 16 hooks into the skin and spinning above the 4-metre-long ear on arm sculpture. (This was 25 years after the first suspension performance). In 2017, with the Re-Wired / Re-Mixed performance, for five days, six hours each day continuously, I could only see with the eyes of someone in London, I could only hear with the ears of someone in NY, whilst anyone, anywhere online could access my right arm and choreograph its movements via the whole arm exoskeleton. An average of over 1,000 online interactions occurred with my arm, and about 300 in-gallery interactions. Physical difficulty has inevitably been a part of most performances (either intense brief experiences or longer duration actions) as well as most projects being technically complex and challenging.

Without wanting to confuse metaphysically, when this body performs it does not think of itself as "my body". There is no body but this body. And when this body speaks as an "I" it does so immersed in a language structured to simplify, to indicate and to categorize, in order to facilitate comprehension of the world (and often confuses us philosophically with the wrong kinds of questions). The more and more performances I do the less and less I think I have a mind of my own, nor any mind at all in the traditional, metaphysical sense. In these performances the body is considered an object rather than a subject. Not an object of desire but rather an object that requires re-designing. There is no Cartesian separation of mind and body. There is no Cartesian Theatre. When I speak about the body, what is meant is a physiological, phenomenological, aware, operating and interacting body in the world. It's more in sync with Merleau-Ponty's body, whose behaviour expresses the complexity of the world it is part of. Not so much in the world but of the world. And this world is increasingly one of technological excess and augmentation of the body. The more and more performances I do the less and less I think I have a mind of my own nor any mind at all in the traditional metaphysical sense. The body now increasingly navigates between invisible nano-scales and non-places of virtuality. It performs increasingly in remote rather than proximal spaces with its activities measured in milliseconds rather than hours.

Tihomir Topuzovski: Let us move to some curious details. In your projects '1/4 Scale ear', 'Ear on Arm or Partial Head' you explored extra organ projects using human cells. This approach opened up questions in relation to genetics and bio-medicine, even addressing some current challenges such as delaying death, producing organs and birth artificially. Could you elaborate on these aspects?

Stelarc: Oh, these are modest projects and aesthetic gestures which incorporate living cells and resort to surgical techniques. With the ¼ Scale Ear, the artist's ear was scanned and scaled down and a biodegradable scaffold was seeded with human cells. A human scale ear would have collapsed as the scaffold biodegraded. This was not a viable attachable construct but rather was a partially living structure in-itself. With the Partial Head, my face was scanned as was a hominid skull. We then did a digital transplant of my face over the skull, resulting in a digital object that was a human-hominid hybrid. The data was 3D printed and a layer of living skin was grown over it. Unfortunately it got contaminated within days and the face was fixed in formalhyde for the rest of the exhibition. Effectively this became a third face, neither resembling the artist nor the face of a hominid. The Ear On Arm idea goes back to 1996. It was first imaged in 1997 as an extra ear on the side of my head but it was not a good anatomical site. Partial face paralysis might have resulted and no surgeon I spoke to was willing to assist with this. It took 10 years to find 3 surgeons to participate. Funding came from a London production company. The idea is not simply to replicate an ear on my arm but rather to electronically augment and internet-enable it. This extra ear is not for me. I have 2 good ears to hear with. Rather this is to engineer a remote listening device for people in other places.

Delaying death is not adequate. Our biology in its present

form and with its present functions in fact guarantees our death. We fatigue easily, malfunction often and become ill regularly. We are soft and vulnerable bodies that are easily damaged and that can be fatally infected by microbial life we can't even sense. Our survival parameters are very slim. We have to be constantly gulping air to extract oxygen. If our internal temperature varies by only 3-4 degrees we are in serious health risk. If we lose 10% of our body fluids we are dead. Our hearts need to beat millions of time during our lifespans without cessation to sustain the body. Excess exposure to radiation and high temperatures kills us. The body is profoundly obsolete in a technologically terrain of fast powerful machines and sensors that perceive much larger chunks of the electromagnetic spectrum and computational systems that process vast amounts of data, do pattern recognition and reliably retrieve information. We can poetically justify death as a necessary part of existence or we can admit that the design of the body is inadequate and requires re-imagining and re-designing.

What is significant now is that cadavers can be preserved indefinitely with plastination whilst comatose bodies are maintained on technological life-support systems and cryogenically preserved bodies await reanimation in some imagined future. Dead bodies need not disintegrate. Near-dead bodies need not die. Chimeras are engineered in the lab and rudimentary synthetic life is now being created. The dead, the near dead, the undead, the yet to be born and artificial life all exist simultaneously and in proximity. Flesh is circulating. Organs can be extracted and inserted into other bodies. Cadaver hands can be reanimated on the limbs of an amputee. And now Fractal Flesh proliferates. Bodies and bits of bodies, spatially separated but electronically connected, generate recurring patterns of interactivity at varying scales. Whilst we now better perform as our phantoms. By Phantom Flesh I mean that with the increasing use of haptic technologies we will generate more potent physical presences with force-feedback. Online, our phantoms flicker on and off like digital noise in our biological life-spans.

Tihomir Topuzovski: The combining of the human body with technology in a more structural way, such as in the projects 'Third Hand' 'Muscle Machine', 'Re-wired / Re-mixed : Event for dismembered body', 'Exoskeleton' and 'Propel: body on robot arm' and 'StickMan' can be understood as being close to Heidegger's insights concerning technology, that it is a mode of being, or revealing and creating a new whole. Do you think that these projects expressed Heidegger's idea where technological things have their own novel kind of presence in engagement with the human body and connections among parts and wholes?

Stelarc: Certainly, Martin Heidegger's insights in "The Question Concerning Technology" are generally relevant, and one should not overlook the impact of Norbert Wiener's Cybernetic Theory. Other ideas of interest and relevance are found in the poetic and predictive assertions of Marshall McLuhan and the operational insights of roboticists Marvin Minsky's

Tele-presence and Sasumu Tachi's Tele-existence (Sasumu Tachi). And more recently the seductive discourses of flattened ontologies and the elevation of non-human actors in Bruno Latour's Actor-Network Theory (ANT) and Graham Harman's Object Oriented Ontology (OOO). Jean Baudrillard's "Simulations" and Paul Virilio's "Speed and Politics" were also books read, amongst many others. Not to forget the theorist and philosopher Arthur Kroker, whose publications "Data Trash" and "The Will to Technology and the Culture of Nihilism" expose and proclaim post-human trajectories. The performances are not so much illustrative of all of these ideas, but rather generate experiences that point to these more learned and philosophical elaborations in text. Sometimes they affirm, sometimes they challenge, often they contradict ha, ha.

Tihomir Topuzovski: In your work you have pushed boundaries between art, technology and biomedicine. However, you reflected on your artistic projects as not being utilitarian. Can you envision the distance between utilitarian and non-utilitarian in art some day being totally removed?

Stelarc: These projects and performances are aesthetic gestures in the human-machine interface, exploring the possibility of alternate anatomical architectures. The ideas are actualized in relatively short periods of time with limited funding, support and expertise. The intent now or in the future is in no way utilitarian. The body is an evolutionary architecture, a sensory, cognitive and interactive operational system. But in an age of excess and increasingly biocompatible materials, circuitry, stem-cell grown parts and surgical techniques, why not extra limbs? Why not extended sensory experiences? Why not cognitive computational amplification? Why only functioning in local spaces and in proximity to others? Why not extrude your sense of self and share your agency? It's not about research in any focused, reductive scientific sense. It's more about affect than accumulating information. What is suggested in the question, a combination of art and utility, is in fact a definition of craft. Unfortunately, the genre of "sci-art" or the idea of "art as research" is more driven by our university institutions that need to authenticate artistic practice by associating it with science and validate it under the guise of research pursuits. Embedded in universities, ethical approval is required. Art can be messy - it can be pornographic, psychologically traumatizing and sometimes even physically dangerous. The methodologies of science and art should not be confused. Art is more about emotional intensity and impact rather than managing information and promoting understanding. If what the artist does confuses, confounds and confronts, generating anxiety, ambivalence and uncertainty, then it's probably interesting art.□

Slavcho Dimitrov

Ron Athey and Acéphale in Skopje
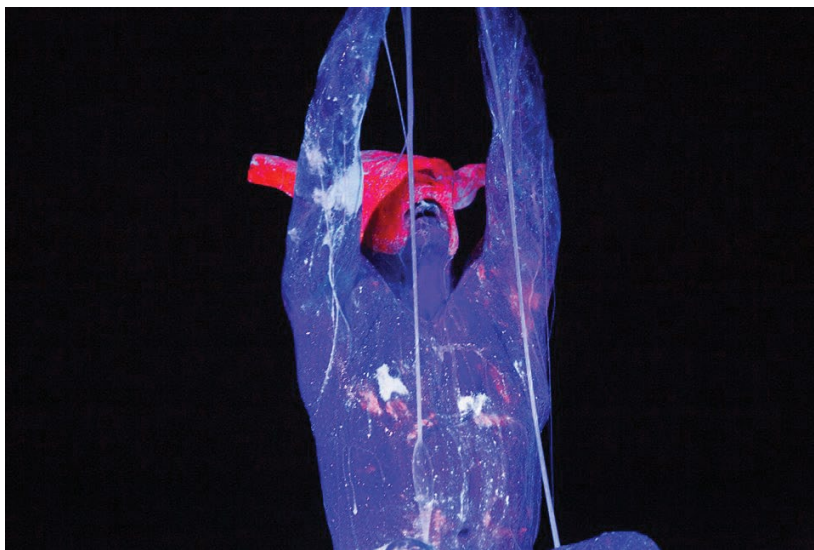
Ron Aethey, Acephalous Monster, Performance, Museum of Contemporary Art Skopje, 2019
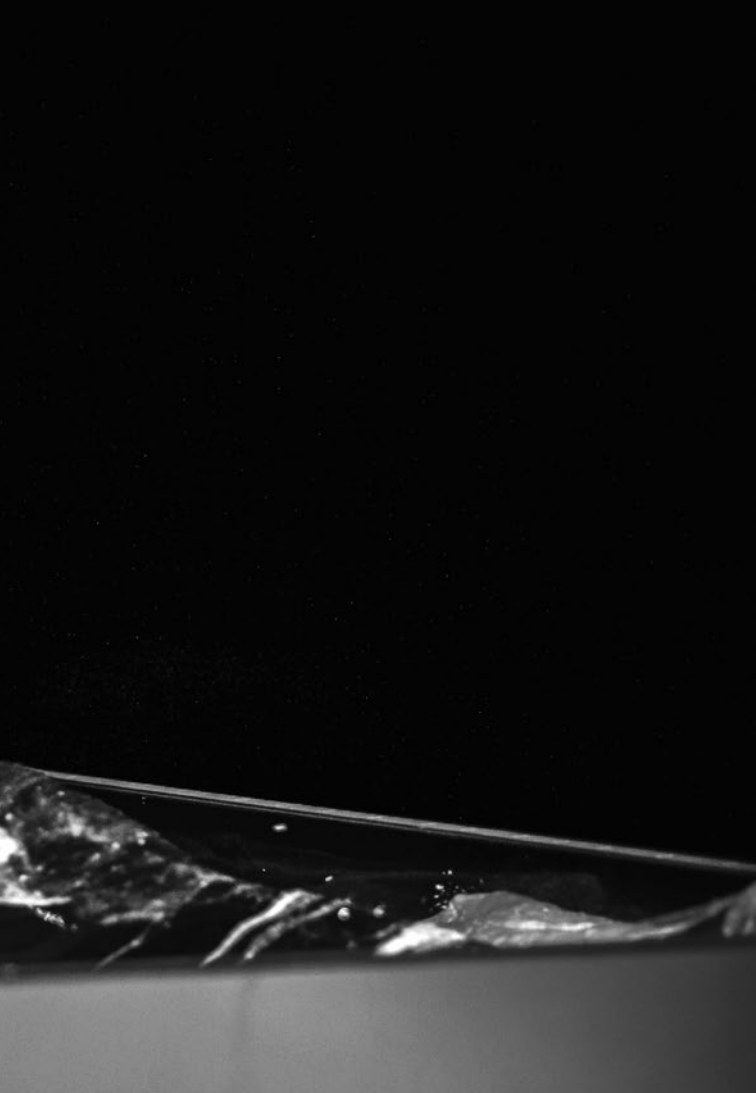Photo: Sonja Stavrova

Ron Athey is an art and cultural icon whose beginnings in performance arts date back to the 80s in the underground music scene in Los Angeles as part of a duo with Rozz Williams from the band Christian Death. In 1990, during the AIDS epidemic, he started exhibiting individual and group works of art in artistic venues such as LACE, PS122, Highways, the Randolph Street Gallery and the Institute of Modern Art in London. His three influential pieces of work in *The Torture Trilogy* are in fact memorials of AIDS and the nature of healing, penetrating the historical archetypes of religious painting and adoration. Content-wise, the piece processes death and possible ways of healing. His works featured worldwide in the 90s, with certain topics – such as the theme of Christian martyrs – having opened philosophical debates on the nature of identity while re-examining the boundaries of artistic practice. A monograph of his work was published in 2013 under the title *Pleading in the Blood*, edited by Dominique Johnson.

Some of Athey's performances, such as *Martyrs and Saints, The Solar Anus, Sebastian Suspended, Self-Obliteration, Incorruptible Flesh*, etc., continually intertwine the aesthetics, excesses and affects of evangelism, engraving in the performance act the personal and historical crises and their affective charge. The uncompromising ecstatic nature of the lively flesh, the refusal to sanitize the body and its perverse appetites and sufferings, its excesses and intimate failures, as well as the exposure of wounds as representations through which he endeavours to take the viewer beyond existing regimes of representation, are some of the key issues shaping the trace left by these works.

In 2005 and 2018, Athey cooperated with experimental opera projects with the soprano singer/musicologist Juliana Snapper and the opera composer Shawn Griffin. 2018 was the year he staged the premiere of *Gifts of the Spirit*, an opera created by automatic writing in real time layers, made possible by the *Mike Kelly Foundation* and the *Broad Museum* and performed at a 19th century cathedral in Los Angeles. In November 2018, his solo

Ron Aethey, Acephalous Monster, Performance, Museum of Contemporary Art Skopje, 2019
Photo: Sonja Stavrova

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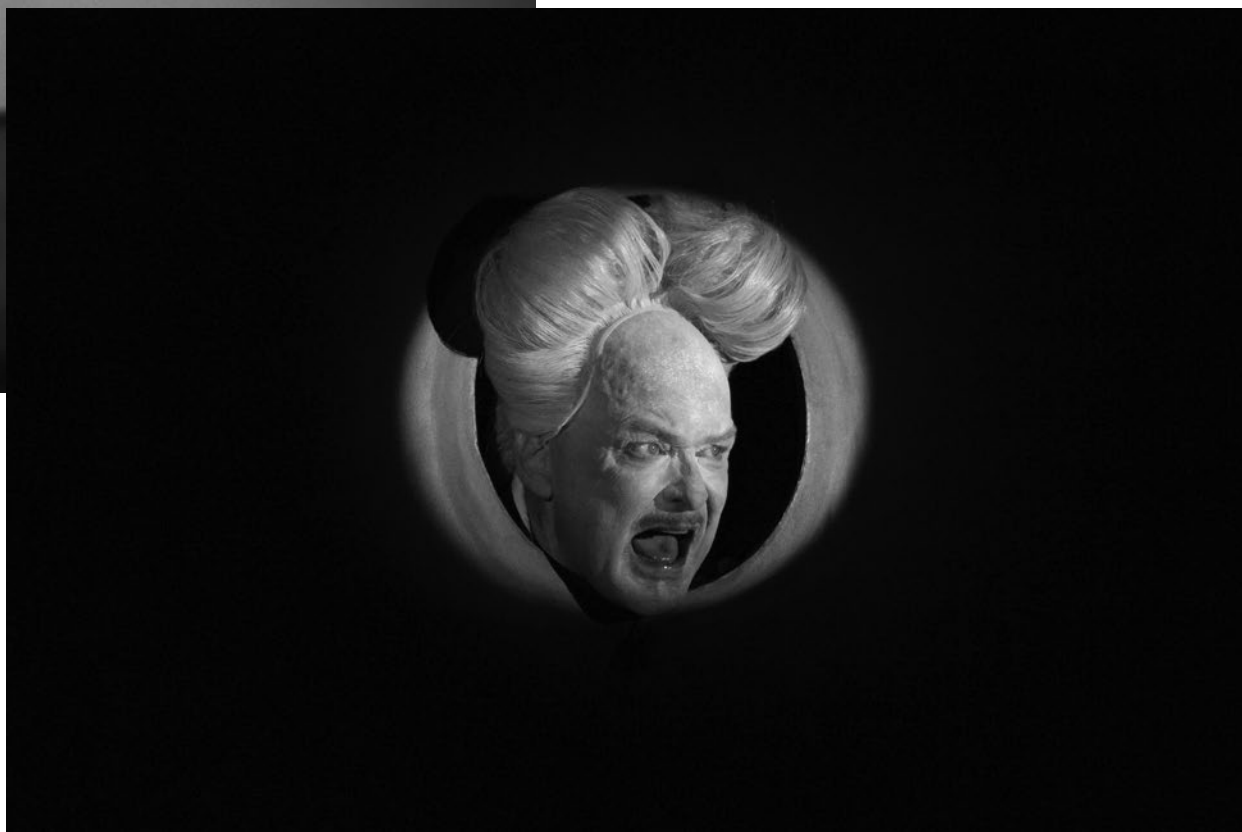
work *Acephalous Monster* had its premiere in the *PSNY's Posthuman series*. A new piece of work, the result of his cooperation with Cassils and Arshia Fatima Haq, was promoted on 1 December 2018, at *Biosphere 2* under the title *Cyclical,* presented by the Museum of Modern Art in Tucson.

A retrospective of his works is under preparation for 2020; it will be curated and organized by Amelia Jones, the art historian and director of the Roski School of Art, and will be presented at the Participants, Inc. Gallery in New York as well as at other venues. It is composed of a sequence of stage, costumes and photographs.

As part of the queer art, culture and theory festival Skopje Pride Weekend 2019 - *RELATIONS: Vulnerability and Resistance*, Ron Athey presented his latest performance *Acephalous Monster*. This is a solo performance composed of projections, readings, lectures, appropriated text and sound. In his new piece of work, Athey turns to Acéphale, the beheaded man who served as an inspiration for Georges Battaille's secret society of the same name in its struggle against nihilism and fascism in France before World War Two. The headless or beheaded man is a powerful symbol of radical transformation, the driving force of Athey's performance in which he merges the limits between humans and gods.

The relevance and necessity of this last piece of work by Athey, as well as of his performance practice in general, was once again demonstrated in the reactions of a part of the Macedonian public: reactions of the paranoid conservative mind showing the symptoms of microfascism of which Deleuze talks. How do you recognize fascism? By the deep hatred of the metaphorical, of the figurative, of the possibility of things having multiple meanings, of transience, of experiencing new relations, and thus also of transformations, and of becoming unrecognizable in the process. By the hatred of the multitude. Or by the hatred of the labyrinth as a structure of existence, and the violent, hysterical desire to arrive at the 'ultimate solution' and way out. For the existence of such assumed (self)suf-

ficiency, as the strongest and most transparent sign of truth, of a fictitious nature and universality, is the unique (lazy and banal) logic of fascist existence and the relation with and the thinking of the other. And I believe this hatred towards the labyrinth is in fact the reason behind the reactions to Ron Athey's performance on the part of a portion of the Macedonian public (the majority of whom never even saw the performance). These reactions only confirm yet again that we need the Acephalous Monster today more than ever – especially given the global threats of neo-fascism, authoritarian populisms, ultra-right movements, the return of religious theocentric authorities and the attempts to theologize the political. The Acephalous Monster is a beheaded Dionysian creature existing in its monstrosity, as it unites and rearranges the borders between the human and the abject/animal, the deistic and material, the Sun and the butthole, the reason and the body/passions. In the imagination of the Enlightened man of reason, the monster is the creature shattering Foundations and the paranoid preservation of the borders of the "pure" order and the normative bodily morphology. Still, and even more importantly, Acephalous, beheaded as it is, challenges the strongest fortification – the Western metaphysical and theologico-political imagination, in which the political body of the multitude is always under the control, domination and command of the Monarch, the Sovereign, the centre of power, God, the Party, the Egocrat, the Capital. Just as the human body is subordinated to the phantasms of the entrepreneurial subject, the autonomous, possessive and competitive individual, the dignified person, symbolized by the head and reason themselves, the slave and servant of which is the body, which is presented as worthless, transient, changeable, uncontrolled, as an animal remnant, dependent on others, submissive to passions and exposure. Acéphale is the Minotaur that must be killed and sacrificed in the name of civilization and reason, in the name of the man (read: Man) who conquers, controls, and is independent of the others.

Is there anything at all that we need

more today, in these "dark times" (Arendt) of the exhausted neoliberal bodies of success, competitive entrepreneurs, subjects whose entire life is a painful endeavour to succeed on the ladders of capital, isolated anxious entities with no care for others and for the relations through which – and only through which – we exist?

This is why the return to Bataille, one of the founders of *Acephale*, who is of exceptional importance to Athey and who says: "the only free society full of life and force, the sole free society is the bi or polycephal society that gives to the fundamental antagonisms of life a constant explosive outlet, but limited to the richest forms. The duality or the multiplicity of heads tends to realize in the same movement the acephalous character of existence, for the principle even of the head is reduction to unity, reduction of the world to God."[1]

We may only respond to the hysterical, violent and erotophobic reactions by citing Nietzsche, Bataille's favourite:

"We are particularly curious to explore the labyrinth, we strive to make the acquaintance of Mr Minotaur of whom such terrible things are told; what do they matter to us, your path which *ascends,* your thread which leads *out,* which leads to happiness and to virtue, which leads towards you, I am afraid of it. . . can you save us with the help of this thread? And we, we beg you straight away, hang yourself with this thread!"[2]□

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1 Quoted from Acéphale (January 1937) in Tiqqun, "The problem of the head", in Andreas Broeckmann and knowbotic research, eds. Opaque Presence: Manual of Latent Invisibilities (Chicago: University of Chicago Press 2010), p.108.

2 Friedrich Nietzsche, The Will to Power, trans. Walter F. Kaufmann and R. J. Hollingdale (New York: Random House, 1968).

Nicole C. Karafyllis

Posthumanism does not exist

Before we look at posthumanism, we should look at humanism; and before we focus on the human, we should address the individuum. Since Renaissance, human individuals have always thought of – somehow – becoming different in the future. At that time, a transformation process happened that allowed to think both the „some" and the „how" differently: from *being* individual to *having* individuality. Soon after, during the Baroque, individuals sensed and cherished themselves *as* individuals, i.e. living personal individuality. This demarcates the high time of humanism. It went along with thinking a specific substance that makes the individual bodies and souls unique, a substance that soon would transform the soul into material and atomistic counterparts. While early modern individuality was embedded in a metaphysical pluralism (Schmalenbach 1920; Lüschen/ Stone 1977), the core idea of *individuum* was unquestioned: being God's creature and thus being result of the impartiability and indivisibility of a general form of existence.

From there, we have come a long way towards the present ideas of post- and transhumanism (Coenen , in which metaphysical pluralism is absent. Rather, it shows how the last generations have digested the debates on Materialism and Darwinism since late 19th century, while, at the same time, never have reasonably adjusted to the vacancies that resulted from secularization. The famous and still up to date philosopher Georg Simmel has embraced the vague feeling of human existence in modernity by the dichotomy *Schopenhauer and Nietzsche* (1907). The „will to life" became the central term to disguise modern metaphysical vacancies and its related sufferings, and it was

tacitly transformed into the will to survive within the metaphysical framework of Darwinism, technological determinism and economic competition.

Against this background, the idea of posthumanism developed almost naturally, because posthumanism is in fact a naturalism. And naturalism is a problem of art, particularly modern art, as again Simmel pointed out. The mimesis of nature – a neodarwinist nature from which the soul is absent – is fragmented into natural elements which are rearranged to bring a scattered form into appearance, an endeavour of modern production aesthetics. It cherishes isolated content rather than full form. When form is product, art is instrumental; it is means to an end, which lies outside both the work of art and the artist.

The concept of „end" or (greek) *télos* has two meanings: the purpose, which relates to normative values, and the end as ultimate limit, as final end, as finitude. Here, the idea of posthumanism comes full circle. It is either understood as some kind of new human with other general purposes or as the end of the human as such, the death of a genus. Note that both understandings do not address the individual but an abstract totality. Posthuman thinkers do not think post human, they think post Humanism. In no way does the idea of posthumanism allow to cherish individual personality. Posthumanism appears as progressive form of change, and is allied by all the neoliberal capitalistic change metaphorics, e.g. „global change"; but this is affirming old decadence theories enframed by technological innovation metaphysics. Technical progress has outruled enlightenment philosophy with its idealistic assumption of a history that enrichens itself

with values for the better – not for the optimal. Posthumanism allows for – again – misunderstanding Nietzsche's idea of *Übermensch* (superman): a being which is able to transgress itself while, at the same time, being full aware that it cannot *want* its perfection.

For the time being, let us hope that history does not repeat itself; and that all these people nowadays bashing the enlightenment will be happy with their little enthusiasms – reaching for no higher ends than protecting animals, having healthy bodies and functional minds. These topics, as it seems, make up the core competencies of posthumanists. The human situating itself between animal and machine is all but new. What is new is, that the difference to both seems not worth mentioning any more. Inbetweenness is seen as danger rather than challenge, thereby doubting the powerful and long-lasting idea of existence. The desire for having a fixed position in the world has become attractive, a world without alternatives. We should regard this as a backlash to medieval cosmologies with its analogy of micro- and macrocosmos, including all the societal backlashes that belong to this analogy.

Maybe, regarding intellectual capacities, many of us so-called intellectuals are already posthuman compared to thinkers in the Humanities of the past. We better call this *retrohuman*, and it would reach back long before antiquity. Maybe these retrohuman thinkers never tried to understand how intellectuals contributed to fascism and militarism a century ago, and how they ignored warnings, for example the one of phenomenologist Edmund Husserl in 1936: „Essentially, there is no zoology of peoples" (Husserl 1976, 320, my transl.). Alternatively, we might think that posthumanists dream of overcoming the burden of responsibility for taking care of humans. Instead, they prefer being in the two modern modes of slavery: the pet and the robot.

Good news is that posthumanism does not exist, because it will always be humans, and neither pets nor robots, which are able and willing to ask for post-humans. The question contains the answer.□

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Igor Grubic

Do Animals…?
2017 ongoing
Multidisciplinary
project (5 posters,
photography, film)

Do Animals…? (2017) is a multimedia project based on the artist's research on former slaughterhouses in northern Italy during his time in the RAVE East Village Artist Residency program. As a staunch supporter of animal rights and moreover as an activist, Grubic investigates the psychological effect these factories of death have on human consciousness. The work is composed of a series of five posters that feature photographs of now empty former slaughterhouses, overwritten with the artist's questions, that appear in the city center in the form of anonymous ads. Silent and cold, but at the same time distinctly disturbing, the images are visually conceived as the path an animal takes from life to death, from light to darkness. Like a surreal call to public moral responsibility, through his work the artist introduces the general public to his examination of humankind's conflicted feelings towards animals, taking full advantage of commercial mainstream media – urban billboards. This compelling urban intervention has already been shown in six northern Italian cities (including Turin, Trieste, and Udine). The Do Animals…? project is also accompanied by a film shot inside these former slaughterhouses at night, together with interviews with former slaughterhouse employees.

Igor Grubić, Do animals...?, 2017. ANIMA(L)RAVE, Villa Manin

DO ANIMALS
HAVE LEGAL
RIGHTS?

DO ANIMALS HAVE LEGAL RIGHTS?

Do Animals..? billboard, street view Trieste, Italy 2018

DO ANIMALS
DREAM ABOUT
FREEDOM?

DO ANIMALS
SURVIVE
EXTERMINATION?

DO ANIMALS
KNOW THEY ARE
PRODUCTS?

DO ANIMALS
GO TO
HEAVEN?
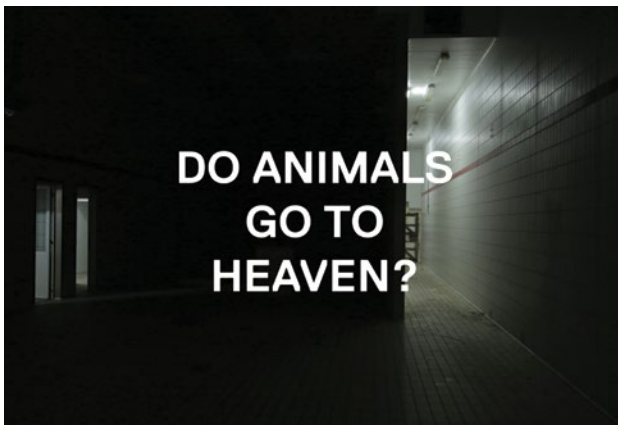
Do Animals..? billboard, street view Udine, Italy 2018 Photo: Isabella Pers

Jeff Rasel

JEFF RUSSELL
Plan for my coffin with extra one tied underneath to contain art critic II, 1981
Drypoint on paper
45 x 59 cm
Courtesy Museum of Contemporary Art, Skopje

A
OF

LANDSCAPE
ANXIETY

Jeff Diamanti

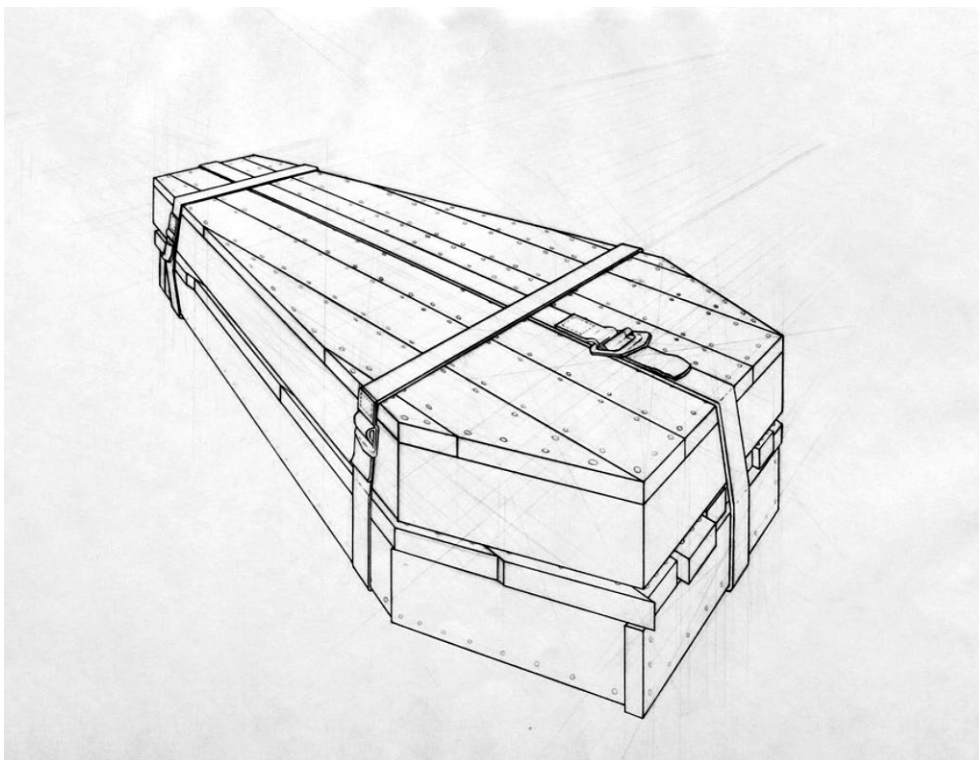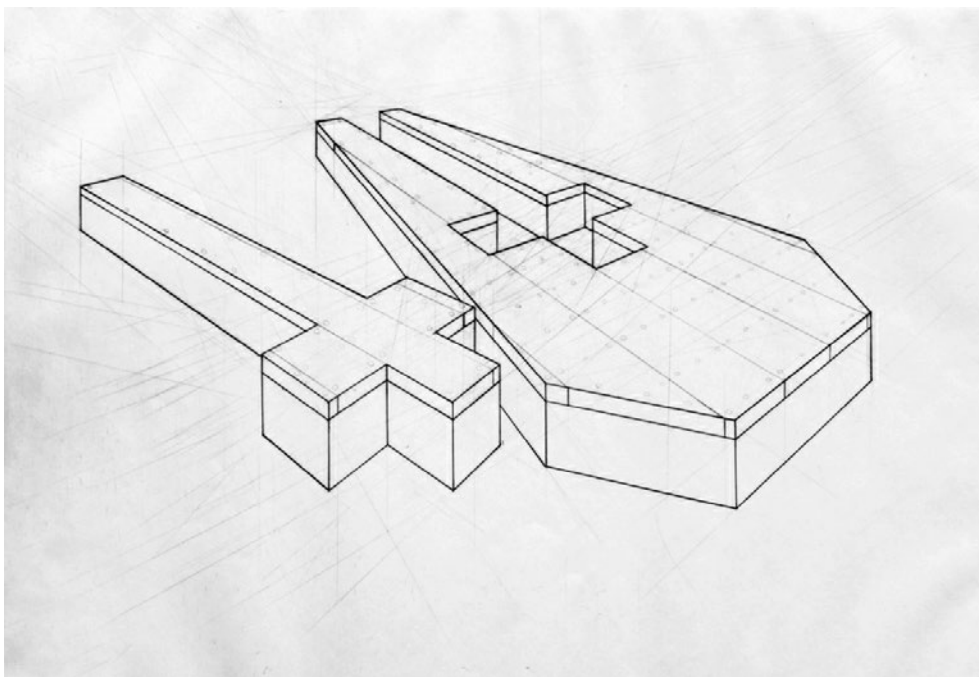# Heliotropism at the Terminal Beach of Critique

The heliotropism of sunflowers should make psychologists see what Wolfgang Köhler meant when he refused to let behavior be parceled out between inherited and acquired components. No inherited mechanism, transmitted by the genes, makes the flower turn to the sun, nor has anybody taught it to do so. Rather, an inherent tendency toward a balanced distribution of energy moves the flower's head into the one position that guarantees the symmetry of solar justice to all its parts.
Rudolf Arnheim, *Parables of Sun Light*

My interest in this essay is in returning to a primary figure of climate discourse which, while primary, has been under-regarded as a source of critical and creative thinking about climate: the sun, or rather modes of relating to the physical and conceptual force of the sun by way of what, building on Rudolf Arnheim and Elizabeth DeLoughrey, I term heliotropism. It's not that the sun—or solar power—has not figured at all in climate discourse. That is what I mean by a *primary* figure: photovoltaic power generation is, next to wind energy, the most immediate technology that comes to mind when you think of sustainable energy transition. Technologically, then,

the sun figures as a kind of key to something like an environmentally conscious capitalism – a sustainable techno-fix to a world broken by fossil fuels. What I am interested in is not necessarily the politics of solar power but the ways in which the sun figures itself into cultural forms of imagining a different relation we might have to the world, to other people, but also to non-human animals and to objects. It is for this reason that I claim heliotropism is an under-regarded source of creative and critical thinking about climate: for while solar power has become what Foucault would call a *dispositif* of the discourse of climate, gestures toward the sun (a relation to solarity) point to a radically different structure of feeling and relation to environment. In order to draw out the critical import of heliotropism, I think about three cultural interventions that turn coastal beaches into a terminal landscape upon which multiple futures—carbon, aquatic, and psycho-social—wash up against the habits of critical thinking today.

I: LEVIATHAN'S MOOD

Ben, the male subject who speaks throughout the opening episode of Shezad Dawood's ten-part video cycle *Leviathan*, does not fare so well. He meets Yasmine, it's true, promising some

semblance of heteronormative continuation past the point of what the film suggests is a kind of civilizational meltdown, but her attachment to him seems at most an extension of "really need[ing] to fuck" as opposed to some romantic attachment; and while he seems to have a pretty good time in the Venetian orgy in episode three, he is beaten up on a beach in Morocco in episode four, and finally raped repeatedly by the captain of a cargo ship in episode five. But one of the peculiar features of Dawood's Leviathan cycle is that the question of how Ben fares turns out not to be much of a question, which is to say a concern, at all. He figures in a plot, but what I will argue here is that *Leviathan* turns plot into a kind of scene, and that the mood of its multiple scenes (or landscapes) is what is at stake in its bifocal commitment to figures of the non-human alongside human discourse. Ben not faring well is, if I can put it this way, beside the point.

This bifocal commitment is established in the opening sequence of *Leviathan*, as the camera is drawn closer and closer to the sun. Ben is talking, and he is here half blaming the sun for the social crisis that precedes his present; but in half blaming the sun, he also half points to an incongruous relationship between the human, climate, and solarity, by which I mean he also appears to rationalize the apocalypse that the film takes as its starting point by emphasizing the insignificance of the human in relation to earth systems that dwarf the centrality of human affairs. In setting up the whole cycle through the figure of a sun that is both hostile and indifferent to the human subject, *Leviathan* turns the very paradox of dominant discourses on climate change into a narrative contradiction: the human is the agent of climate change, at the same moment that the very distinction between nature and human history folds in on itself, and with it the edifice of Liberal Reason responsible for our concept of the human to begin with. To be clear, this is a foundational problem for all manner of post-anthropocentric social and environmental theory in the humanities and social sciences over the past two decades: the double bind that
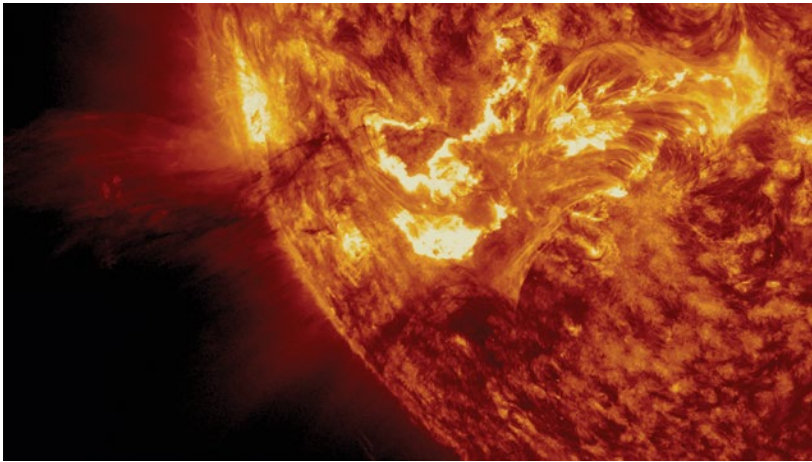
Figure 1: Shezad Dawood, Leviathan Cycle, Episode 1: Ben, 2017 HD Video, 12'52''
Courtesy of the artist and UBIK Productions (with footage from the Goddard Space Flight Center, NASA)

comes with our collective coming to consciousness of our own agency *as a planetary force* named by climate change, at the same time that the multiplicity of agents distributed across the non-human world appear as the solution (either ethically, conceptually, or politically) to the problem of climate change. And importantly, in the post-anthropocentric move that seeks to relegate the human to its biophysical place in the world, there typically comes a certain resistance to narrative, since narrative brings with it a set of genealogies and drives that are (usually) resolutely human. This double bind goes by many names, including the Anthropocene, the becoming geological of the human, the geontological turn, and more broadly, the posthuman. So how does such a contradiction possibly get stretched out into a narrative like *Leviathan*'s, when narrative seems always and everywhere to demand a human set of drives, if not a human centre, to begin with?

Each episode of *Leviathan* in turn is focalized through a new character, though the means of that focalization varies along at least two axes that will come to matter, in my account, for the dethroning of the subject that the climate of *Leviathan* helps figure. Ben, Yasmine, Arturo, Jamila, and Ismael take up the narrative discourse of each episode – they speak in different languages, and with different proximities to what it is we see in these films – but they are not responsible, strictly speaking, for the

mood of each episode. Mood and voice in narratology are distinct categories because, in Mieke Bal's classic account, a story can be narrated from one or many perspectives, while the focal point of that narrative can be a person or thing that never speaks (the golden bowl in Henry' James' short story of that name, or Heathcliff in *Wuthering Heights*, who speaks but doesn't narrate, and whose character is predominantly responsible for the mood or affective atmosphere of the novel). The distinction between mood and voice is important in the study of narrative because it helps name the distance between discourse, or what is said, and what is felt—those shifting centres of gravity that concern the cultural object as a whole, or what make a cultural object irreducible to characters or narrators who speak. Mood, in other words, need not (indeed, often is not) an effect of voice. More typically, and indeed more strangely, mood is just as much a quality of objects as it is of subjects.

What I want to do today in this essay is offer a reading of three recent cultural objects that help figure a new way of thinking about how climate changes theory, which is to say how critical theory has imagined, and might yet imagine, the relationship between the physical environment and the unfolding relationship between first nature and second nature in a context of planetary global warming – a context, in other words, in which what had been previously figured as the background to human history (the environ-

ment) suddenly turns (in Bruno Latour's phrasing) into the foreground of global affairs. Multiple concepts of the nature of the subject and the vitality of the material world have already made inroads into upending what looked like hardened and fixed categories of theory, namely the subjects and objects of history, but what I want to do here is draw out some of the concepts and aesthetic modes of perception made available by a set of cultural objects that in some ways already prefigure a new climate of critique in their very structure: *Leviathan*, which makes plot horizontal with landscape; a recent photography project that lets the sun burn holes through the negative; and a canonical installation at the Tate Modern in London that recreates the scene of a sunny day in order to make an experience of collective pleasure available to a viewership increasingly nervous about a warming world.

We are ten minutes into Ben's narration of *Leviathan*'s present—our foreshortened future—when he tells us in the past tense of the planetary attunement that marked the collapse of civilization. As the sun begins to "squeeze" and "amplify pressure", triggering a speculative terminus to earth's human subjects, and as the fires roar, the floods rush in, and that most Shakespearian melodrama of all, *"The Tempest"* turns the environment strange, Ben notes, at precisely the moment that we finally have Ben the character before us in the frame, that "The weather seemed to parallel the mood of earth's remaining inhabitants. Sorry, Monkeys!" At this, we return from Ben's past tense analepsis – a past tense that is our present today – and take up *Leviathan*'s own present tense, but with a new relationship in narrative voice and character. Ben, the character in the frame, spills something on his pants while the narrator refers to the spill in the present tense. For the rest of the episode, the narrative voice will speak in the present tense of the frame, speaking from the viewpoint of Ben. But rather than tie narrative voice to mood, as is more typical of this diegetic attunement (where a character is also a narrator, though speaking from outside the frame of the

Figure 2: Shezad Dawood, Leviathan Cycle, Episode 1: Ben, 2017 HD Video, 12'52''
Courtesy of the artist and UBIK Productions

Figure 3: Shezad Dawood, Leviathan Cycle, Episode 1: Ben, 2017 HD Video, 12'52''
Courtesy of the artist and UBIK Productions

camera), we get the opposite. The effect here is paradoxical: precisely because Ben's narrative voice is *not* the voice of Ben the character, since Ben the character doesn't speak to the camera as we follow him through an abandoned house, the distinction between mood and voice has now been exposed precisely as *distinguishable* at the moment that it looks as though they've become synchronized. For the minute or so that they share space, Ben and Ben's voice are only tenuously shared, and we know it is tenuous because when they break once again in what will be the final scene of episode one, we land on the terminal beach, anchored now to the mood of a whale's corpse – a whale that doesn't speak but doesn't need to. This will matter for the conclusion of my argument today where I suggest that the mode of perception that

Leviathan makes available is one that is distributed between landscapes, characters, and matter.

By episode four we return once again to the beach, except this time it is a Moroccan beach. Life under water and life above water are in this landscape at their most proximate so far in *Leviathan*, sharing both the frame (featuring constant jump cuts from under water to the beach) and what Jamila calls "old shit, new shit, brown shit, dead shit" or, put differently, the shared relation to, and as, detritus. We see shit on the beach, are told that these nomads built homes out of the shit of the past, and watch living bodies turn back to decaying matter as Ben and Yasmine are saved in turn on the beach. But if our shared materiality is a temporal one (we came from, and will return to raw materiality over time) then

it is the concluding split between what Jamila says and what Jamila sees that signals *Leviathan's* commitment to something like bifocalization able to distribute mood across landscape, character, and matter. "How am I recalling this?" Jamila asks, self-reflexively, "for on the beach I can see myself running, my heart pounding out of rhythm with this new imported beat, running for self-preservation." Jamila sees herself running and is more than a little troubled by this split in voice and body. Narrative discourse has once again been made *distinguishable* from the body to whom it is assigned, at precisely the moment that the body to whom it is assigned is running for self-preservation—which is to say, running for her life. It will turn out that the camera has not been scanning the landscape to set the scene, so to speak, but that the scene of each landscape is already a way of seeing. The film's visuality is distributed, never fully reducible to the attempts by any of its narrators to monopolize its point of view. The terminal beach, I have been arguing so far, is the scene for what *Leviathan* prefigures as an aesthetic of perception able to dethrone the subject of late liberalism.

But what I want to say next is that this dethroned subject of late liberalism is *not* the same subject that – as we'll see in a moment – helped harden the core concepts of critical theory in the postwar era, around which so many critiques of culture, of capital, of ideology, of sex, and indeed of climate have since flowed. In short, the genealogy of critical theory carries forward in its core concepts a way of conceiving social emancipation not yet alert to the theoretical pressures that come with global warming. What *Leviathan* is imagining for us is the erasure of that originary subject of capital and critical theory alike. For this subject, on this beach, has already been unplugged in *Leviathan* from what we'll see was in the 1960s an ideological and embodied relation to environment coded by capital. But in returning to canonical positions to 20th century critical theory, we can also begin to tease out the *social* environment through which fossil-fueled modernity implied a kind of tragic disso-

Figure 4: Shezad Dawood, Leviathan Cycle, Episode 4: Jamila, 2018 HD Video, 10'36''
Courtesy of the artist and UBIK Productions

ciation of the subject from an experience of physical environment.

II: ADORNO'S TAN LINES AND THE SCENE OF MODERN BOREDOM

Recall that for Adorno, the scene of modern boredom is a sunny day, and its landscape is a beach. We do not need to imagine the scene, because it is imagined for us. For him, sunbathing is not just "physically unpleasant," but more profoundly "illustrates how free time has become a matter of boredom".[1] By 1969 when the essay is first written, boring weather for Adorno is boring because its leisurely draw is no longer heliotropic, as we might say of the flowers that dramatize Monet's fair weather or Arnheim's sunflowers, but pathological. These bodies turned toward the sun do not occur to the critical theorist as a floral metaphor, much less a kind of aesthetic mimesis wherein the worker desires not just to behold the picturesque but *to be* picturesque. In order to read it this way we would have to imagine a different kind of aesthetic analysis on Adorno's part, much closer, that is, to Lukács' much earlier distinction between first and second nature – a distinction that proves not to be a difference but a process whereby an idea of first nature (unmediated, or immediate nature) re-appears on the other side of second nature as its constitution (where desiring a direct experience of nature comes to verify one's own distance from the natural – a symptom, in other words, of one's socialization into second nature): here, the mediations of the picturesque (or in our example, the desire for an experience outside of history, the terminal beach) appear from within the historicity of second nature (an aesthetic sensibility on the one hand, and a subjective drive to escape the domination of second nature over all experience on the other). But that is not what Adorno is after here: these people, he insists, are not after the appearance of first nature at all.

Adorno has something else in mind. The scene sits at the heart of the penultimate chapter of *The Culture Industry* entitled 'Free Time' and the purpose of that chapter more generally is to historicize the dialectic of labour productivity in 20th century capitalism and the free time it generates outside the work environment. "Free time," Adorno states at the outset, "has already expanded enormously in our day and age. And this expansion should increase still further, due to inventions in the fields of automation and atomic power, which have not yet been anywhere like fully exploited".[2] He is being both descriptive (noticing a postwar upsurge in energic power put to use in the factory) and anticipating the paradox of labour productivity in the postindustrial era we'd call our own today: namely that the calculus of work begins to structure the subject's creative, personal and intimate desires so that the time of work will begin to resemble what Jonathan Crary has called the *24/7* work

schedule. Free time becomes a form of unfreedom in Adorno's account, because it turns mimetically towards a productive impulse: whether through self-cultivation on a campsite (he is just as grumpy about camping as he is about sunbathing), or passive rejuvenation before the next day at work in front of the mass cultural object *par excellence*, the television set. It is this unfreedom which Adorno thus encounters on the beach, where the great unfree turn to the sun out of compulsion.

What Adorno's scene of boredom imagines for us is a commodity fetishism that has become fully embodied in the subject of the commodity itself – the body of mass culture, and the mass market, now treated *as a unified body* instead of some conflicted or split subject, the other to capital's domination. Laid out, precisely not like a flower, these bodies "who grill themselves brown in the sun merely for the sake of a sun-tan" express so literally the reach of this pathology: "In the sun-tan, which can be quite fetching, the fetish character of the commodity lays claim to actual people; they themselves become fetishes".[3]

What I want to suggest here is that Adorno's tan-lines give us a rather remarkable insight into something like an internal limit to mid-century critique. A threshold because it is to the frame of the weather on the one hand and the "damaged life" on the other that this scene gets played out at a conceptual register, and not the frame to which I will suggest next has come to unnerve the former: namely, the frame of climate and planetary life so central to recent work responsive to global warming in the humanities, as well as the social and physical sciences. The mass cultural body is heliotropic, to be sure, but solarity is paradoxically incidental to the scene, if by solarity we mean a social relation and rhythm somehow calibrated or attuned to solar energy. We are at the very cusp of a threshold to thought, here, on this beach; a threshold that Adorno, Benjamin, and so many others in the tradition that traces its roots back to Hegel, will call time and time again the dialectic of nature and history. And it is a threshold for at least two reasons that I want to explore from

the vantage of today's still nascent but increasingly historicist experience of what Andrew Ross calls "strange weather" and Amitav Ghosh has so provocatively termed "uncanny weather" – adjectives that in both accounts describe first the becoming climate of weather, and second the supremely unhomely quality that it wreaks on our shared sense of habitat.

This is another way of asking the question this book has been tracking throughout regarding how climate changes critical theory. Namely: what happens to social theory when climate change bids farewell to boring weather on the side of the object – when the weather turns strange, uncanny? For one, the heliotropic pleasure of a nice day becomes relative to the heatwave, to the violence of late fossil capital, and to the surge in atmospheric volatility, occasioning in turn an ecopoetics of climate, *and an emergent climate of critique.*

III: SUNBURNED

In what I think I'd like to call this new heliotropism, the stress is on the latter – tropism as a towardness that exceeds the figurative or allegorical since it is material. In Chris McCaw's recent photography series titled 'Sunburned', for instance, photography's innate tropism to light—a towardness that is part of its very ontology as a medium—is followed through to its terminal limit, where the photons from the sun are allowed to hit the photograph for long enough to burn a hole in the image, mixing any reasonable distinction you might make here between burn and image. The image is a burn, and the burn is an image, but it is an image in excess of its reference point on the film – that is, it is neither a representation nor an enigma on the film – since the duration of what McCaw calls "solarization" in fact saturates the tonality of the photograph as a whole, or, using my terms from earlier, provides the whole image with its mood. If Lucio Fontana's slashes broke through the medium, McCaw's burns saturate it. Hence you get what looks like an inversion of tonality – a negative of a positive – returned finally to the black and white palette we see in the gallery

thanks to the vintage fibre gelatin and black and white paper McCaw used after years of experimenting with different films. Unable to use a negative, McCaw's large-format photographs become non-preproducible, in turn redefining *both* the tropism of photography and the ontology of the punctum – that element of the photograph that so famously reached out and pricked or bruised Roland Barthes and made it, and the experience of it, unique – since the cut here is literal and aesthetic. The sun doesn't merely figure itself into the image; it saturates the image as such. In McCaw's words, "the sun has become an active participant in part of the printmaking".[4]

The various cuts made by the sun are indexical, then, of the flipped relationship between the subject and object of photography that takes shape in these enormously long exposure sequences. In more recent iterations of the series, McCaw leaves the aperture open for nearly twenty-four hours in order to give the sun space and time to work on the paper. They also become geolocated as a consequence of their horizon lines relative to planetary axis, so that for instance you can read the Arctic out from the sun's formal intervention. Here then is a kind of heliotropic realism, both because the materiality of the sun's radiation breaks through the barrier of representation and begins to reconstitute the medium of photography, and because to capture the relative position of the earth and the sun during a daily rotation, the photo paper must track in real time the horizon lines of the sun's daily arch.

"Sunburned" in my account so far is interesting less for its investment in climate change as a topic than for its commitment to letting something like planetarity overtake the medium of representation as such. It is precisely not a series of tropes about the subject's relation to the sun, much less a discourse of sustainable solar power driving us through to a kind of eco-capitalism, that is conceptualized in these photos. Instead, I am arguing that *Sunburned* is a turning of the sun into the subject and object of representation. And it is this turn to the materiality of the sun as the

primary source of energy for life on earth that seems so crucial to let back into our critical compass of the present, amidst what so many have from different angles called the new conceptual terrain flooding the disciplines in the wake of our shared coming to consciousness of anthropogenic climate change. For Elizabeth Povinelli, this new terrain "put[s] us] on the edge" of new genres of "antagonisms": namely, "the clash between human beings and nature, between societies and natures, and between entangled species and the geological, ecological, and meteorological systems that support them".[5] The stakes here of course are multiple and exist at multiple scales of reference (from the animal to the meteorological), but the focal point of this "edge" is the category of the human in what Povinelli calls the "geontology" of the present, and the late liberal discourses and figures of reference that seek to inoculate the human against a world that appears to have a mind of its own. "The simplest way of sketching the difference between geontopower and biopower," Povinelli explains, "is that the former does not operate through the governance of life and the tactics of death" – as was true of what Foucault earlier termed the biopolitical – "but is rather a set of discourses, affects, and tactics used in late liberalism to maintain or shape the coming relationship of the distinction between Life and Nonlife." In this contemporary form of power, "Nonlife" is not a description but an effect of being governed over as non-sovereign stock – from plants and animals to minerals and hydrocarbons. Life (or bios) becomes metabolic, reproductive, while Nonlife merely the biophysical means for life. But geontologies also names an anxiety and a threshold to reason: no longer is the governance of Life and Nonlife merely an originary premise of settler liberalisms but a reaction against its fault lines, its real material limits – the sometimes slow and sometimes rapid erosion of its "backdrop to reason".[6] So if I can put this more simply, late liberalism is no longer operative merely along the difference between the western subject and its orientalization of the other who can be put

to death by the state (the colonial other, the racial other, the gendered other), so not just an "us" and an "other" but now too an *otherwise* beyond even the other, which gets disfigured into Nonlife. Climate change in this way of thinking is the erosion to this backdrop. What a weird idea, no? That the backdrop to late liberal reason is an anxiety about the distinction between Life and Nonlife. Perhaps this is why *Leviathan* reduces Ben's plot, and plot more generally, to a feature of the landscape: the landscape, like McCaw's sun, is rushing into the frame.

Povinelli's periodization of late liberal reason works to update Foucault's genealogy of power for the present, but the expressions of this new threshold to reason are for Amitav Ghosh even more pressing on the limits of cultural form. Ghosh's sustained critique in *The Great Derangement* is of what he sees as a resistance to climate change in contemporary literary realism. His worry is that contemporary fiction does not have the formal or historical capacity to engage fully with the strangeness of climate change. Strange and sudden weather events fit uneasily within the probabilistic disposition of contemporary realism, Ghosh maintains: it simply refuses to turn to uncanny weather events, for historical reasons pertaining to the institution of literature and the bourgeois sensibility attached in the 19th century to different genres of gradualisms, but also for reasons that bring us back to the subject and objects of climate change. Ghosh is looking in cultural form for an anagnorisis of climate change and a peripeteia in keeping with it, referring to the recognition of the true nature of events in Aristotle's *Poetics*, and the panning out of the narrative following that recognition. But here are the stakes of this anxiety: the uncanny is what precedes anagnorisis, or recognition of the true nature of things in the classic theory of tragedy – since the uncanny *defamiliarizes* the protagonist's sense of homeliness, a planetary home turned strange. You can see why Ghosh wants to think about climate change in these terms: it is the inexorable rise of the past 200 years of industrial civilization now expressing itself in all

manner of natural phenomena that we *understand* as bound together, but lack cultural means of *recognition,* of cultural re-attunement. The tragedy of anthropogenic climate change, in this account of contemporary realist literature, is that it cannot yet figure the double bind of uncanny weather: on the one hand the "nonhuman forces and beings" that animate climate change, and on the other hand the manner in which "they are the mysterious work of our own hands returning to haunt us in unthinkable shapes and forms".[7]

Haunted in the uncanny character of strange weather, the human and non-human get mutually figured and disfigured, and the "edge" of reason Povinelli claims for the anxiety of late-liberal geontopower returns us to the scene of the sun bearing down on the terminal beach. Except that the beach in this reading has now been doubled, so that there is one produced from within the bored subject of capital, and one that marks the "edge" of late-liberal reason. One feels awfully tempted to call them in turn the beach of first nature and second nature, but is this not already the distinction that is under erasure in the new climate of critique? We are not here after an antihumanism latent in in so many eco-fascisms or fascism as such, around which flows any number of romanticisms of *the natural*. Instead, it is to an extended critique of bourgeois humanism in the face of its uncanny reappearance as strange weather that leads us back to the beach, looking for a heliotropism that breaks with the pathology of unfree time.

IV: THE WEATHER AS SOCIAL FORM

In Olafur Eliasson's 2003 *The Weather Project*, this split exists on the same beach, a beach laid out beneath an artificial sun that holds the viewer in its gaze. Bathing beneath an enormous assemblage of monofrequency lights resembling the sun, in Tate London's Turbine Hall, this beach returns the terminal landscape to the institution of art and imagines a version of the heliotropic that is self-consciously infrastructural. Certainly we are on the brink here of some-

thing like the participatory turn in art, if not the full-blown relational aesthetics so troubling to Claire Bishop.[8] But it is the material specificity of the encounter with other bodies here that I want to end on, since it is not for a normative investment in the relational as such (in short, Bishop's beef with the erasure of friction and antagonism in the relational turn) but an experience instead of a being together *in infrastructure* that 'The Weather Project' helps make available. But it is a cheeky kind of togetherness whose cheekiness is part of the re-attunement that this heliotropism helps trigger, because the ease, pleasure, and drives that come with an infrastructural modernity that feels *precisely* like second nature is what is here being indexed by the sun. Turbine Hall figures in 'The Weather Project' not behind the backs of the viewer as a backdrop or frame but as the condition of its encounter. It is not for an illusion of modernity's control over the sun, over a solar economy re-harmonized with the meteorological, that the project invites its viewer in for heliotropic pleasure. The 'weather' in 'The Weather Project' is an expression of an electrified culture that experiences weather as, and as an effect of, the built environment – of a landscape that is coextensive with mood. We are returned to Adorno's tan lines then, the scene of modern boredom: a beach that is not a beach, in front of a sun that serves the subject of capital.

Well almost, because remember that this was never at stake on Adorno's beach to begin with, and so treating Eliasson's installation as a betrayal or deviation from the experience of first nature would seem to presuppose the capacity (or desire) for such an experience in the first place. For Louise Hornby, Eliasson's installation and his more recent engagement with ice in 'Ice Watch' "undermines notions of nativity and the natural environment" by turning the experience of the subject into the focal point of environment, in turn alienating environment from itself.[9] For the optics of towing melting ice from Greenland and Iceland to Western Europe, I find Hornby's objection compelling and worth pursuing amidst the larger trend in recent

Figure 5, 6: Olafur Eliasson The Weather Project, 2003
Monofrequency lights, projection foil, haze machines, mirror foil, aluminium, and scaffolding 26.7 m x 22.3 m x 155.4 m
Installation in Turbine Hall, Tate Modern, London
Photos: Bas Uterwijk 2003

ecological aesthetics to bring climate to the subject, as it were. But the critique of 'The Weather Project' on the shared grounds of 'Ice Watch', namely that they determine the conditions for an experience of weather first by simulating an environment in the mode of a soft-militarization of climate, misses what in my reading is the character of *collective* experience that for Hornby does nothing more than "(justify) the human domination of the engineered environment".[10] Climate change is inextricably bound to resource-intensive infrastructures that turn daily life in a place like London into a feeling awfully hard to distinguish from first nature, precisely because infrastructure is the material grounds through which habitus hardens into the given. To my mind it is the defamiliarization of this infrastructural condition of modern habitus that needs drawing out rather than an aesthetic project that would naturalize a site-specific fantasy of second nature's supposed other.

Hence my argument here runs against the grain of the normative discourse of the environmental humanities, which prefers an unmediated or *immediate* relation to the biophysical, since for me (finally) weather in 'The Weather Project' gets turned into a source of *social form* that surges through the subject as much as it does London's grid, and by extension the energy apparatus that binds the polis to fossil-fuelled planetarity. Another way to put this would be to say that the weather of 'The Weather Project' is the opposite of a Romantic concept of nature, since it is here knotted to the built environment. We might term this instead man-made weather, not in order to promote the hubris of a modern discourse that plans to geoengineer its way out of climate change, but instead to underscore the lived experience of attaching oneself to the social, to a provisional collectivity, *amidst* infrastructure. In other words, Eliasson's work registers the historicity of climate, more obviously as one approaches its mechanical arrangement up close, where the last thing one sees before entering the interior of the Tate Modern is 'The Weather Project''s interface of aesthetic experience and the in-

frastructure of modernity. Whether or not pleasure turns into pain here, the force of the project's intervention is to refuse any knee-jerk moralization of form and instead expose the necessary relation between social form and the materialities with which it is entangled. The future tense of anthropogenic climate change might yet not depend on a simple opposition between techno-capitalism on the one hand and a kind of technophobia on the other. Modernity might yet resolve into a collective project of social and ecological justice that puts infrastructure to work in the service of a radically unimaginable future. The critique of the weather on the grounds of its (re)production from the assemblage of second nature seems to miss the whole point about both the weather and what its relation to climate unsettles. It unsettles the scene of modern boredom, and asks us to bid farewell to boring weather.

So how, finally, is the sun with which we open into the world of *Leviathan* different from the electric sun of 'The Weather Project' or the subject and object of McCaw's 'Sunburned' series? In the account I have offered here, heliotropism always draws us back to the terminal landscape of critique, not because it offers a vista onto sublime nature as such (that is, this is a terminal landscape of critique not because it is the *outside* of critique), but because the *historicity* of the gesture is what is made available as an aesthetic experience in each of these works. On Adorno's beach, it is an experience of modern capital in the form of a fully fetishized body. In McCaw and Eliasson, on the other hand, heliotropism is a means toward reconfiguring the medium of experience, via solarization of the photograph on the one hand and the infrastructuralization of pleasure on the other. In *Leviathan*, finally, the conditions have been imagined for us to bifocalize the materialities of landscape and character coequal with plot, but this bifocalization is also coextensive with how Dawood's films figure a historicity that is a future tense of our own today – that is, only because *where we are* in *Leviathan* is in the wake of the nation-state, the global economy, the pathologies of

late-liberal reason, and finally, the originary conditions of boring weather from which Critical Theory first emerged. But nobody ever said the post-anthropocentric turn would be easy, or that it would of necessity feel very good. And part of my argument has been that it will not feel very good, at least not until some new social form (or perhaps what Kathryn Yusoff has called a geosocial politics) emerges to care for us in the wake of which *Leviathan* re-attunes our aesthetic faculties, which is to say a radical social form capable for the first time in human history of caring for an "us" that is human in voice but not necessarily in mood.[11] Anything short of that is going to continue to feel really, really bad.□

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Susanna Hertrich
Haunted Lands

Haunted Lands is a series of documentary photos taken in the coastal area of Fukushima prefecture in Japan in May 2016. This area was devastated in 2011 by two disasters. The first was a natural disaster, followed by a massive technological failure. An unusually powerful earthquake with a severe tsunami struck the coastline, destroying vast areas of human settlements and killing thousands of people. As a direct result of these natural forces, the nearby nuclear power station of Fukushima Dai-Ichi collapsed, causing radioactive contamination which will remain on the land for an undefined period of time.

Haunted Lands evolved as a side project while shooting a short film for my project *Brighter Than A Thousand Suns*. The short film observes a fictional character who is wearing a uniform that detects and visually reacts to radiation as he walks about investigating the landscapes of destruction. Radiation as a specific form of environmental pollution manifests itself like a supernatural force – invisible to all our senses and beyond comprehension. It appears like a curse or a haunting, rendering the land into a non-place. The notion of this area as a "Haunted Land" was the starting point for both my projects: the fictional take in the aforementioned short film as well as the documentary photos included in this journal.

I and my team found the locations for the short film and the photos while driving around the area over two consecutive weekends. We entered ghost towns that had stood dormant for five years and had just been reopened for daytime visits, like the town of Namie. We looked into the windows of an abandoned primary school, which still had the date '11 March 2011' written on the blackboard and we met the curiosity of bored policemen who were patrolling the area.

Both projects were enabled through financial support from Schader-Stiftung and Hessisches Landesmuseum Darmstadt in Germany. Shooting in Fukushima would not have been possible without the organization and support of Japanese-Canadian artist Daisuke Takeya.

Amanda Boetzkes

Posthuman Planetarity

The posthuman turn signals an overcoming of the dichotomy between human nature and technology. This overcoming has been considered in relation to the incorporation of nonhuman scales of space and time through new media. With the rise of bioart, robotics, digital practices and virtual spaces of exhibition, contemporary art has transformed the perceptual capabilities and cognitive orientation of human bodies. However, the emphasis on the technological conditioning of the human as a constitutive theorization of the posthuman begs a return to the question of planetarity. For if "the globe is in our computers", as Gayatri Spivak suggests, then it is precisely this technological siting of globalization that poses the question of the alterity of planetary existence.[1] A full theorization of the posthuman in contemporary art would therefore have to contend with the zone of alterity it presupposes. What, then, is posthuman planetarity for contemporary art?

While posthumanism invokes new horizons and extensions of perception and the recursion of a technological posterioriority within the human *as* the posthuman, planetarity resituates the question of what is supplementary within the human.[2] Planetarity implicates posthumanism in the recurrence of geological alterity in the human body as well. I suggest that the recursion of the planetary can be understood through Alfred North Whitehead's concept of the *superject*, a posthuman conceptualization of subjectivity in terms of its organismic emergence in the pursuit of sensorial fulfilment. The theorization of the superject of necessity situates existence within a planetary consciousness. Yet it also leads to an acute awareness of one's own co-implication in ecological feedback loops. Thus the expression of the planetary superject is also the expression of the planet's *superjection*. That is to say, the expression of the individual is co-mingled with its reactivity to planetarity. Reading the posthuman through our planetarity entails a recognition of the ways that reaction, expression and consciousness are all integral components of the superject. In what follows I will explore the implications of these statements through an analysis of the works of Alain Delorme, Tomás Saraceno, Pierre Huyghe and Ganzug Sedbazar.

Posthumanism Becoming Planetary

In her formulation of the concept of planetarity, Gayatri Spivak presents it as a protean figure, an alter (Autrui) of globalization.[3] Its uncanny appearance disrupts identifications with the global and activates a repositioning of subjectivity, if not an undoing of subjectivity altogether. To think of humans as planetary rather than as global or worldly, she argues, is to radicalize alterity itself (one's own and others) in ways that are not derived from a global imaginary still rooted in the imperial drive. Planetarity does not appear within the "gridlines of electronic capital", those virtual delineations that constitute global identity in accordance with "Geographic Information Systems";[4] instead, planetary intrusions make their appearance as much from within the human as they do from without. They induce forms of overcoming such boundaries of internality and externality.

Despite the command of globalization to schematize the imagination, Spivak argues, humans always tend toward an alterity, whether that be a transcendental figure of nature, mother or god that is attributed with an original animating force. Yet this original force is nevertheless prefigured by the imaginary structure of globalization. Alterity is therefore a continuously receding domain, never bound to the strictures of the figure. Planetarity as such is both a radical figure in contrast to "nature" and also an insistent operation of disfiguration by which the planet and planet-thought preserves its zone of irreducibility within the dominance of globalization.

To suggest that the planetary is both a figure and an operation of disfiguration is to account for a distinction from the concept of fiction, or the redistribution of the sensible, to use a phrase from Jacques Rancière.[5] Fiction for Rancière appears as a reordering of sensation from within a general consensus of the visual field. A fiction can recast the lens of perception, yet its emergence is something of a spontaneous occurrence – an expression of freedom and a form born of the history of aesthetic distance (or Kantian disinterest). Fictions present a paradox to the world of contemporary art, which paradoxically seeks to entrench itself in the material conditions of ever more marginal zones and peoples in order to authenticate and activate its gestures of freedom from the schemas that organize a general consensus of the sensorial field. Yet contemporary art must confront its own spatial fallacy: the logic of globalization is all-consuming and thus there are no spaces, peoples or beings left untouched by it. There is no longer a marginality to freely lend itself to a redistribution of the sensible. At the same time the planet itself recedes ever further from vision and sensibility.

If ecological crisis (mass extinctions, climate change, and the economic stockpiling of depleting energy resources) tells us anything, it is that planetarity itself is in terminal withdrawal from human consciousness and perception. Planetarity escapes global mastery, but nevertheless feeds back its expression

precisely in the form of ecological crisis. Thus, while there is no space or place of marginality, the planet itself is making unprecedented appearances as the *urform* of globalization's unmanageable zone of alterity. Planetarity's operation of disfiguration is a form without fiction and a fiction that declines into formlessness and nonsensibility. It is expression as catastrophe, representable only as the collapse of art and reality in and as the tragic end of the human, alongside and with the end of life itself. The figuration of posthuman planetarity would therefore be the end life the occurs.upon the occasion of its intrusion.

In such a predicament, to state that the intrusion of planetarity is also the demise of subjectivity as such seems gratuitous. Yet there is still the experience of the human dissolving into the more-than-human at stake in contemporary art. In her analysis of the figuration of bodies of water, Astrida Neimanis describes such experiences as *posthuman gestationality*.[6] To think of ourselves (humans) as bodies of water that are inseparable from global water - from other species that are also bodies of water and from future bodies of water - is to alter our accepted cartographies of space, time and movement. To consider the posthuman body as a body of water is more than just to understand the confluence between bodies: it is to understand that the logic of bodily water is *gestational*, giving rise to new lives and new forms of life that are never fully knowable. The posthuman position spans materialities in common across the ontological differences between those who are imbricated in them.

But while posthuman gestationality is an embodied condition, it is not an expression of the biopolitical regime. As Stacey Alaimo argues, the posthuman position is transcorporeal, a state of comingled flesh shared with nonliving and often toxic material agents as well, such as plastics, heavy metals and other poisonous free-floating elements.[7] The outcomes of posthuman gestation from this transcorporeal condition are therefore not merely biological concerns. Insofar as posthuman gestation is an operative form of planetary conditioning, its

outcomes implicate planetary ecologies and futurities. Alaimo vividly describes the contemporary moment as an incubation of transforming material agencies: changes in atmosphere and climate, ocean acidification, and the flooding of the environment with thousands of xenobiotic chemicals.[8] The human is not the culmination of evolution but rather an unstable bodily parameter held within a vast genomic soup - a set of material intra-actions that we imagine from entanglement to greater entanglement.

From this perspective, gestation becomes a form of *geontopower*, as Elizabeth Povinelli defines it. Geontopower, she argues, appears at the limits of biopolitical forms. Foucault articulates the biopolitical through the figures of "the hysterical woman (a hystericization of women's bodies), the masturbating child (a pedagogization of children's sex), the perverse adult (a psychiatrization of perverse pleasure), and the Malthusian couple (a socialization of procreative behavior)".[9] At the edges of these forms of biopolitical management, however, come new figures that span the living and non-living: the Virus, the Desert, and the Vitalist. Povinelli considers these figures in their narrative unfoldings in literature and theory, positioning them as both the pre-living origin of humanity and its non-living futurity. A genealogy of power in these terms, as Kathryn Yusoff argues, reveals how biopolitics is subtended by geology.[10] Povinelli therefore suggests the following formula at play upon the rise of geontopower: Life (Life{birth, growth, reproduction} v. Death) v. Nonlife.[11]

Posthuman Gestationality as Plastic Topology

In finding an origin of life in nonlife, Povinelli makes two interventions. First, she situates the human as an integral part of a broader geoassemblage of entities that neither lives nor dies but rather changes state, and that at times is withdrawn from care by the living biosphere.[12] The earth is not dying, she suggests; rather the planetary extends itself through and beyond the human.

Second, she opens the way to understanding planetarity as a geological recursion within the human body. If we are to theorize the posthuman by way of its planetary alterity, it must be understood that planetarity is both the geological precondition of the human and the assemblage by which an operation of posthuman gestation takes place. Posthuman gestationality can now be considered as both a recurrence of the geological in the human from its antediluvian precondition and as the operation of georeproduction at the limits of the human as these give way to a posthuman deformation.

Planetarity is an uncommon origin that returns as an uncanny intrusion within embodiment, and that which carries embodiment outward, returning it to the earth and its elements. The site of planetary power and its distribution does not remain confined to living beings; it crosses materialities and agents. Posthuman gestation is therefore not a management of life but an activity over the course of which biopower is transgressed and carries forward into a planetary futurity. The processes of georeplication cannot merely be conceived in terms of a redistribution of the sensible within the regime of biopower. Rather, geontopower passes through the human and carries its planetarity forward into an indefinite future. It is for this reason that Povinelli calls for a de-dramatization of human life in order to gain perspective on and take responsibility for mass extinctions and the other ecological abuses generated by carbon-based human expansion.

Insofar as the posthuman demands resituating the body's materiality in its continuity with broader geoassemblages, it also raises the question of how vision evolves through these planetary trajectories. For while human perception adjusts to technological extensions that make non-human scales available to the senses, planetarity is not so much an extension as a material precondition and posthumous inertia. Planetarity of vision necessarily emerges from the embryonic agents from which the human emerged, and the dusts, sediments, crystals and mire into which we give way. Yet it also emerges from the geochemical materials

Figure 1. Alain Delorme, *Murmurations: Ephemeral Plastic Sculptures #3*, 2012-2014.]
Image courtesy of the artist and Rutger Brandt Gallery.

we create and which integrate into the planetary fabric. The planetary condition begs the question: how do we visualize in and through our operations of posthuman gestationality?

The French artist Alain Delorme creates digital photographs that he constructs in a process he calls a "plastic surgery" of the image. His photographs enact the process of posthuman gestation as a synthetic image of a synthetic topology. For example, in his series *Murmurations: Ephemeral Plastic Sculptures*, Delorme visualizes multitudes of plastic bags carried by the wind in cloud formations of starlings (Figure 1). The photographs capture an uncanny geological reality, not by showing the sedimentation or accumulation of plastic as archaeological sediment but rather by showing it in its synthesis with living beings and in its synchrony with the elements. Birds have been replaced by multitudes of plastic bags that fly in formation. The integration of plastic into the planet, as a form of posthuman gestationality, registers in the rhythmic but nonetheless automatic play of plastic against fluxes of air. The images are not landscapes oriented and grounded to a human scale. Instead the photographs "scape" the air and atmosphere, setting the multitudes of plastic beings against colorful skies, sunrises and sunsets, dawns and dusks. The images have lost an assumed geological ground; their perspective has lifted off and is suspended in the air so that only the tops of buildings, public monuments, tips of wind turbines, factories and power lines are visible. Yet the planetary condition is nevertheless the manifest subject matter of the series.

The animate quality of the plastic bags shows how posthuman gestationality occurs through the expressivity of materiality and not merely as a technological synthesis of the human with the geosphere. Posthuman gestationality is a material heterogenesis. As cultural theorist Gay Hawkins argues, plastic was designed for maximal disposability, but its evolution over the latter decades of the 20th century must be understood in terms of plastic's patterns of emergent causation.[13] The chemical makeup of plastic was developed in response to the economic demand for more pliant, lightweight, useable and saleable material, while at the same time these qualities made it more recalcitrant as a form of waste so that it has entrenched itself in the earth's elements even at microscopic levels. In other words, plastic has become an economic agent that expresses itself as a planetary topology that spreads through social channels as a commodity, but also extends into the environment as a form of waste that catalyzes toxic reactions in biological life. Plastic is not merely an economic agent, then, but also a geontological force that appears as an uncanny form of planetary life/nonlife.

Plastic expresses itself as a flattening of scales, as a penetration of living beings, as the subsuming of objects into a common topology. Delorme's murmuration is not the beautiful autopoietic movement of a flock of birds but rather the implied sensation of plastic's procession through the living planet as it informs and co-emerges with elemental materials. Further, we might speculate how the gestationality of plastic recurs in the human body, not only as allergic reactions (asthma caused by carbon-based air pollutions from chemical refineries, for example), but also as emotional reactions (climate change denial, panic, or dysphoria), affective reactions (mimetic repetitions or neoliberal positivity), or aesthetic reactions (the replication of plastic as representation, as in Delorme's "plastic surgery" of the image).

Planetary Superjection and Plastic Form

In her analysis of the monitoring of the Pacific Garbage Patch, Jennifer Gabrys argues that sensing technologies has become an integral part of the mobile and traveling "society of objects" forged by the aggregation of organic and inorganic materials in the ocean gyres.[14] Scientific speculation therefore occurs in a processual system in which it informs the ocean environment alongside plastic garbage and other debris as much as it extracts information. Geo-speculation is therefore a sensing practice that concresces in a nexus of materialities to formulate a scaffolding by which it makes sense of the environment. In other words, the becoming planetary of the human is as much a process of perception (and perceiving perception) as it is a matter of the comingling of matter across ontological categories. Sensing technologies body outward and integrate themselves into planetary processes. In turn, they produce embodied recursions and introjections in perception.

Gabrys approaches this phenomenon from the perspective of the aggregated objects that move as geoassemblages - a society of objects. But insofar as perception is bi-directional -projecting from the body into the environment and introjecting back into the body as perception–we might also question how images concrese in perception. I would suggest that the posthuman condition entails the production of a society of images that informs collective perception and that planetarity is experienced in and through a society of images. More strongly, if we are perceiving by way of a geoassemblage of bi-directional images (images that terraform even as they inform perception), this is to suggest that images exert perception as a planetary reality, and that the planet also perceives the human geoassemblages of perception. Societies of images might be thought of as another form of posthuman gestationality. It therefore becomes crucial to consider the intentionality of such societies of images and the collective perceptual affordances they generate.

Elsewhere I argue that ecological perception entails a circuitry between ecosystems, the human visual system - which includes the optical organs, the neurological system in which they're implicated, and the phenotypic changes that occur in response to the environment - and practices of representation.[15] I suggest that art cultivates a way of seeing ecologically *within* vision *through* its representational practices. That is to say, art attunes the visual system to its own environmental projections and introjections. To better understand this bi-directional movement, I turn to the concept of

affordance as defined by cognitive psychologist James J. Gibson. Gibson situated perception environmentally, arguing that "…exteroception is accompanied by proprioception-that to perceive the world is to co-perceive oneself".[16] Importantly though, while the perceiver proceeds through the environment sampling and selecting information from the ambient surroundings, perception is informed by both the variations of stimulus and the invariants of the environment. The affordance of an environment is comprised of the limitless information that an environment yields, the possible meanings of this information to the perceiver, and the full range of actions with which the perceiver may choose to respond. To summarize, Gibson argues that the affordance cuts across the distinction between the subjective and objective, and stands as both "a fact of the environment and a fact of behaviour".[17]

Gibson's model of ecological perception situates invariant environmental information *inside* the subjective experience of stimulus response. Thus, while the perceiver senses through the stimulation of the organs, information is not energy-specific; it remains the same despite radical change in the stimulation obtained.[18] The activity of perception as a being moves through the environment does not distort the objectivity of the world. The image of a Swiss Army knife serves as both an example and a counterexample of Gibson's understanding of the human perceptual system and its way of gleaning environmental affordance (Figure 2). On the one hand, humans possess sophisticated perceptual organs. On the other hand, however, those organs do not instrumentalize the environment in the manner of a tool. Rather, they are sensitized extractors of information from energetic stimuli. Our sensory instruments, including the eye, are not what we think if we assume that they extract information. Rather, they exert themselves into the environment in such a way as to distill information in relation to the stimulation they project into the environment.

Affordance encompasses any *potential* behaviour, or what Gibson calls "action possibility". An environment may

afford a behavioural outcome to fulfill the perceiver's needs, but it also affords each and every potential behaviour as well. Perception affords both a flux of stimulation and the invariant structure of the environment combined. This understanding of the objective dimension of subjective perception is what allows the individual subject to exceed its own subjective perception. It is in this vein that Alfred North Whitehead considers the subject processually in relation to the environment: the subject emerges as a superject as it proceeds through it in pursuit of its own fulfillment.[19] The subject strives to actualize itself in its movement through the environment; its fulfillment is therefore always premised on its own unlimitation into the environment, and the return of its perception into its being. The becoming of the subject through environmental process is therefore the becoming-objective with that environment. The superject is the totality of the procession into the environment and the introjection of that environment as perception.

While Gibson approaches the relationship between an organism and an environment through the distinction between stimulation (what is relevant to the individual) and information (what exists objectively in the environment), Whitehead's superject is somewhat more existential, proceeding into the environment through the interpretation of *inscapes*, the internal image projection of external environments. For Whitehead, however, the inscape is not a still image, but one that equally moves in process; an internal objectivity that *processes* the individual's environmental procession. If the individual is a superject, then, it is precisely in virtue of this inscape that it spans the limits of internality and externality.

It is in this context that we can consider the architectonic installations of Argentinian artist Tomás Saraceno. Inspired by the spatial organizations of spider webs, Saraceno reconceives of the space of the installation by creating layers of thin plastic that visitors must move through using all four limbs to steady themselves in the midst of continuous feedback from the varying

Figure 2. Swiss Army knife. Courtesy of Victorinox, 2019.

movement of the plastic. For example, his work *On Space Time Foam* (2012) creates a web-like infrastructure made of three layers of plastic film that hang 20 meters above ground and are set at different air pressures to create several interactive and reflexive levels (Figure 3). Saraceno derived the structure from quantum theory, drawing from the idea that subatomic particles make alterations in the space-time continuum that constitute a fourth-dimension of material reality. Saraceno imagines this fourth dimension as a set of suspended spatial parameters that defy gravity. The movement of visitors is therefore entirely relational, provisional and speculative. Any movement must also await the assurance of feedback in order for the successful fulfillment of a procession through the space. The installation therefore envisions a reality in which the totality of individuals' movement and environmental feedback produces a super-reality, a combination of the collective movement of visitors as they move in relation to one another through the plastic medium. Their movements generate feedback in the plastic layers so that the installation is constantly changing shape. The installation demands the internalization and anticipation of feedback between one's own movement, that of others, and the installation's reflexive output. The individual's procession through the environment could not possibly be linear, but rather demands that the human form contort itself into what Donna Haraway calls a "string figure".[20]

Plastic material is less a geontological actant that produces its own topology and more a receptive medium by which systemic interactivity and a sensitization to the surrounding environment occurs. Another way to put this is that plastic is the medium through which to develop a sensibility within and for an immersive, changing and atmospheric space. Instead of being an appropriating, invasive and surrounding material, plastic is a reflexive basis that enables fourth dimensional formations to emerge in co-creation with its inhabitants. The gambit of the installation demonstrates how the concept of the superject entails the in-

Figure 3 Tomás Saraceno, *On Space Time Foam*, 2012. Solo Exhibition at Hangar Bicocca, Milan, Italy. Courtesy Studio Tomás Saraceno 2013

herent collectivity of the individual. Planetarity is not merely a consciousness of one's own reflexive feedback with the environment; it is the recognition of one's own superjection of the planet and others as well. In other words, one's interpretation of the topology is gestational; it is integral to the co-production of that topology.

The superject's co-production of an inscape and a planetary topology is also at play in Saraceno's interest in spider webs and their communication. For his *Hybrid Webs* series, Saraceno puts different species of spiders in large Minimalist Plexiglas cubes (Figure 4). The spiders then interweave their webs through the spaces, producing floating intertwined structures. Importantly, Saraceno's spiders vary in their range of sociability, some being solitary species, others semi-social, and others collective. What is hybrid about the webs, then, is that they weave interrelationships that span the different species types. But more importantly, the webs serve as interspecies communication technologies. Saraceno records the vibratory output of the webs as the spiders set the threads trembling. This form of communication is a bi-directional feedback by which sending out a stimulus into a surrounding ecology returns feedback to the individual about that ecology. What is "hybrid" about the webs is not merely their cross-

ing of different species; rather, the artwork crosses the lines of communication between them, through its fabrication of a common gestational infrastructure. For his *Spider/Web Pavilion 7* at the Venice Biennale (2019), Saraceno created an installation with a hybrid web cube and then aired the vibratory sounds through the floor as a way to attune visitors to a non-verbal environmental communication and extend human senses towards the embodied cognition demanded of a planetary response-ability.

Conclusion: Posthuman Acéphale, Planetary Disfiguration

Bearing in mind Saraceno's formulation of gestational topologies that cultivate planetary sensibility and responsibility, it is helpful to consider philosopher Tom Sparrow's account of plasticity as a philosophy of embodiment.[21] Sparrow defines plasticity as a relation of structural homology between the individual and the environment. He argues that human plasticity can be theorized as precisely the site of the body's limits and openness to the external environment. Thus he draws on William James' definition from *The Principles of Psychology*: plasticity "means the possession of a structure weak enough to yield an influence but strong enough not to yield all at once."[22] It is a "dynamic structural integrity of the

Figure 4 Tomás Saraceno, *Spider/Web Pavilion 7*, Venice Biennale, 2019.
Courtesy Studio Tomás Saraceno, 2019

set amidst groupings of poisonous night-shade plants, LSD-producing fungi and toxic flowering foxgloves. A greyhound named Human with a dyed pink leg lived on the plot of land, moved freely about the site with no constraints. These disparate lifeworlds were gathered together by a focalizing agent: a colony of bees built a massive hive around the head of the sculpture, thus seaming together the numerous divides in the space. In grafting together concrete and honeycomb, it disfigured the human head and the face as a site of expression, patterning onto it the busy signalectic world of bees. The canonical nude was defaced and remapped in a planetary fabric. Importantly, the expressivity of the artwork is recast, like Saraceno's spider vibrations, as an embodied communication of planetarity.

A similar disfiguration of the human is at play in the practice of Mongolian artist Ganzug Sedbazar (Figure 6). His performances enact an overcoming of interior perception and exterior environment

embodied subject." In this vein, he considers the aesthetic dimensions of the plastic body whereby form is defined as the "operation of forces that carry the experience of an event, object, scene and situation to its own integral fulfillment". The plastic form of the body gives priority to circumstance, materials and energies over cognitive teleologies in the determination of structure.[23] Saraceno's installations are both determining of the body's movement and sense-effecting on the body in a way that permits the planetary condition to register in perception. They cultivate a condition of plasticity between the body and the environment in such a way that the environment can become an incorporated and intercorporeal reality. Plasticity, in these terms, articulates the bi-directional movement of planetary perception and expression that constitutes the operation of posthuman gestationality.

Importantly, though, to consider the plasticity of the human body in relation to planetarity involves the disfiguration of the human as a dynamic planetary operation. The recursion of the planetary in the human body is therefore the disfiguration of the seat of cognition (the myth of human verticality and the head as the seat of the mind), and its refiguration as embodied interconnectivity. Consider Pierre Huyghe's *Untilled* installation at Documenta 13 in 2012 (Figure 5). Like much of Huyghe's work, *Untilled* staged discrete animal and vegetal *Umwelten* (lifeworlds) that overlapped but nevertheless maintained gaps of indifference toward one another. The outdoor installation was composed of a sculptured nude

Figure 5 Pierre Huyghe, Untilled (Liegender Frauenakt) 2012 Courtesy Pierre Huyghe, 2019

Figure 6 Ganzug Sedbazar, performance, Unesco Pavilion, 56th Venice Biennale, 2015
Courtesy of the artist.

using bread dough *(talqan)*. In one performance after another, Ganzug brings a bag of flour scatters it in the air and on the ground, gathers up dough, sometimes throwing out chunks of it at the wall and watching it drip down, and then wrapping the dough around his head sometimes chanting or speaking as he does so. The bread dough is a traditional Mongolian staple, and one that Ganzug calls forth for its iconistic value; it is a symbol of continuity between traditional nomadic life and contemporary post-Soviet Mongolia. We could think of it as a material that spans an Indigenous way of life with the contemporary world through the very gestational procession of the one into the other. The dough therefore becomes a material agent, a substance that Ganzug wraps around his head in order to deface himself. In some of his performances this is a literal tactic to muffle his expressive capacity (the capacity to speak with language) while enhancing his bodily expressivity. Importantly, he uses the dough to disfigure his head and reconfigure his position – to render himself acephalic through a recasting of his head as basic substance. For Ganzug, it is the nervosity of muffled sound from the suffocating enclosure of the dough that becomes a form of expression that unseats consciousness by entangling it at the axis of human language and posthuman gestationality.

Planetarity, then, is not a matter of a technological synthesis of nature, but rather a repositioning of perception and communication away from human cognition and instead in its synthesis with geoassemblages. Posthuman gestationality may be an anxious position, as in the case of Delorme's plastic bags that permeate the air; but to understand the posthuman as a positioning of perception in its projection and recursion with planetary topologies permits a reconceptualization of the human as always exceeding its limits by propelling into the environment as a planetary superject. By the same token, the posthuman superject gestates with the planet and therefore must account for its superjection of planetarity: the bi-directional relationship between perception and gestationality.□

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Installation view, Grabbing of the space , Museum of Contemporary Art Skopje, 2019
Photo: Stanko Nedelkovski and Blagoja Varoshanec

Gligor Stefanov

A Conversation with Material and Space

When I begin a new piece I try to free myself from my preconceptions. My aim is to start from zero, to begin from the simplest dot or line. This requires a rejection of my own internal monologue. It requires quiet from the conversations and input of others. I refuse outward shows of organization and the finality of conceptual sketches. The beginning of work is like walking into a cave, where I must watch my own steps in the dark, where everything is new and unfamiliar.

I reject the desire to decorate, design or organize spaces. The space that is usually granted to me is in galleries, but my attitude is similar when working outdoors. Setting is a point of interest to be activated – to be tested, to be enlivened, and to be revealed through the dialogue of material and process.

If future works turn out like previous works, it is foremost because of my spiritual-emotional aspiration towards a particular creative process – a process in which I free myself in a flurry of teenage enthusiasm and wonder. I dislike premise work in important messages or ideology. I don't foresee changing the world through the processes of my art.

I often think of the loneliness of Van Gogh, who on one cold winter morning was able to hold a dialogue alone in his room with his old ripped up boots. What did the artist want to say with these boots? What did he want to ascribe to the world? I only know that the means by which he showed his anxious restlessness was a gesture of immediacy and strength that can leave none indifferent. Only children can often muster such abrupt poetic expression. In my process I try to mirror this childlike attitude of direct expression from momentarily available moods. With my materials I look to immediately control the visual result.

Classical sculpture techniques and materials like stone or bronze do not offer much in terms of impulsive malleability and flux. The results of working with stone or bronze are only visible in the nearly final stages of sculpture. Natural materials like tree branches, leaves and, most importantly for myself, straw, are capable of intensive and immediate development. They are also capable of exalting thin 3-dimensional lines that can allow one to draw on space as if it were a canvas. And even more wonderful is the glistening shine of straw. In any abundance, straw casts a dynamic interplay of light and shadow.

When I arrange it in a space it's as if there is a fiery jazz rhythm being played between shadows and light. I try to understand the substance of the material and its real possibilities in a space so that every aspect of the straw comes into play – its smell, texture, variations in colour, every part is an opportunity for expression. Straw is particularly unique in the energy and light it can convey.

The straw forms I create, along with other natural materials, are all physically massive. At first sight it is incomprehensible that these would be used as materials for sculptures that float in the air. I separate straw from the ground and try to grow the straw into the forms I see fit. I try to give new life to the straw by intervening in its natural capacity for growth. That is the sense in which I speak of straw sculptures as a realization of energy, but it is by my intervention in the performance of their biological nature – or their *telos* of growth – that expansion to the cylindrical form is possible, and that expansion is marked by the form of the nest, of kites, and ultimately, the form of the angel.

Installation view, Grabbing of the space , Museum of Contemporary Art Skopje, 2019
Photo: Stanko Nedelkovski and Blagoja Varoshanec

Installation view, Grabbing of the space , Museum of Contemporary Art Skopje, 2019
Photos: Stanko Nedelkovski and Blagoja Varoshanec

Installation view, Grabbing of the space , Museum of Contemporary Art Skopje, 2019
Photos: Stanko Nedelkovski and Blagoja Varoshanec

In the Haze of the Technosphere

Chris Salter

In the haze of early summer Hong Kong smog, one can see flickering, sputtering light and shapes in the distance. Looming on the Kowloon horizon, the 488m-high ICC tower displays a string of iconic images on its glass and steel LED façade – fluctuating numbers arranged in columns, a massive shadow of a boxer, sudden bursts of white light, the supple figure of a female shadow moving towards one and then away, the flash of currency signs and arrows pointing up and down.
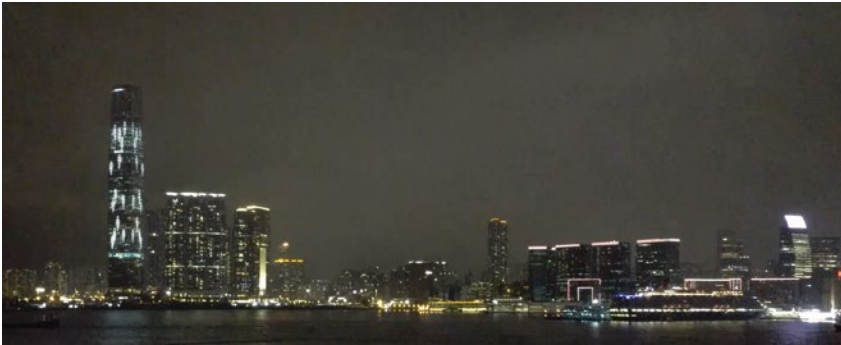
Accompanied by the din of Kowloon's traffic-filled atmosphere, there is also a special observation platform on the Hong Kong island side where one can also experience a short but startling soundtrack – a kind of countdown consisting of beeping sounds invoking the ticking passing of time, cash register foley, sweeping white noise, deep percussive booms and shallow breathing.

This sense of motion towards some pending moment of apocalypse or suspension is replete in the atmosphere of the display and its accompanying soundtrack. But this event of disorderly sounds and images, of icons superimposed over bodies, does not take place in 2019 in the heat of the Hong Kong protests; it occurs instead in 2016 during the annual International Symposium on Electronic Art (ISEA). Shown as part of an open call for projects during the symposium and festival "designed to envision specially curated time-based artworks amidst Hong Kong's public urban space", the HK ISEA's thematic title *Cultural R>evolution* now seems frighteningly prescient, like a premonition of the events to come.[1]

Counterpolis is the name given to the particular two-minute audio/visual work described at the top of this essay. It was collaboratively created with my long time collaborator Erik Adigard from the (in)famous design studio M-A-D in Berkeley, California. Well known for their aggressive design for everyone from IBM to the early *Wired* magazine spreads that ferociously announced a dual utopian/dystopian world constructed by new digital technology through visually assaulting, in your face day-glo graphics and car crash-like collisions of images and text, M-A-D (McShane – Adigard Design) has long exploded the boundaries between design, art, research and social engineering.

Counterpolis is deceptively simple in its structure: it is basically a clock. In our different collaborations, Adigard continually demonstrates his obsession with clocks and timers. This goes back to the late 1990s when his SFMOMA-commissioned web artwork,

the mysterious and almost hermetic TimeLocator, premiered online during that museum's inaugural (and sadly, only) major new media exhibition entitled 010101010. Soon after, Adigard and I did our first work together – the large-scale audio-visual installation *Chronopolis*, which was commissioned by the Goethe Forum in Munich under the then director Dieta Sixt and premiered in the cavernous Grand Halle in the Parc du La Villette in Paris in 2002.

Consisting of a very large 10 x 10 meter square floor-projected interface displaying days, hours, minutes and seconds, together with grids over which four animated pictograms representing the time elements traveled, *Chronopolis* already introduced a specific visual and sonic style that we would deploy on subsequent projects. Within the animation, each pictogram moved at a specific speed determined by the real-time system clock of the computer, leaving a trail of dots behind. The pictograms symbolized flows in the contemporary city – currency, goods, people, and processes of decay.

We played these same themes out again in a 2008 commission for the Venice Biennale of Architecture called *Air XY* – an installation combining real-time animation, sensors, fog, light and sound to explore the way hidden systems in the contemporary city increasingly shape our perception and bodily experience. Here too were swarming icons, flashes, sliding images of data, spectrograms, the inside code of software – in other words, the information layer of a computer desktop exploded into physical space. The bodies of the visitors were captured by cameras in real time, projected onto the chaotic surface of the screen and graphically bounded by floating rectangles, years before such images would become commonplace in reports about AI-based facial targeting and recognition.

Counterpolis continued that tradition both in its merger of desktop iconography and a physical emplacement in relationship to people's bodies, albeit this time using an urban scale that dwarfed the Hong Kong observers. In our cryptic description, the work is described as "a 120-second visual and sonic commentary on the urban forces that shape the 21st century city". The piece itself consists of a countdown populated by a "regime of animated people, spaces and things" that "seems to run on its own logic. Yet, as our bodies navigate the global city, the order that frames this industrious ecology is time; an order that clocks by the second the flows of the metropolis and the longevity of all things."[2]

Counterpolis is described as exploring the relationship between image and object. But what here constitutes the "object" – the bodies on Hong Kong Island staring at the altitudinous ICC? Bodies as pixelated glyphs that walk across the surface of the tower? Or, jumping forwards three years, bodies being violated by truncheons and spritzed blue dye, pummelled by clubs and rubber bullets?

To put it more directly to the point: what does this urban screen-based work illuminated like so many other commissioned projects for this hulking, Chinese architected skyscraper (a most appropriate name), have to do with the theme of this issue of *The Large Glass* on biopolitics, posthumanism and contemporary culture? Let me attempt a few answers. First, *Counterpolis* suggests that bodies, in their forever fleshy, fragile, precarious state, are increasingly subjected to the flows and tsunami of global capital. Indeed, more recently, it seemed only a matter of time before Hong Kong's Causeway Bay, one of the planet's most expensive areas for retail real estate, would fall victim to the blue water cannons and teargas clouds that mark the city's new surveillance-state atmosphere.

Bodies continually appear in *Counterpolis* – as moving silhouettes, as images behind pulsing light bars, sometimes nearly obliterated by flickering, target-like icons. As one watches this spectacle of almost advertising-like digital apparitions accompanied by the digital beeping of a clipped sine wave that sounds like a ticking clock, one cannot but be reminded of the realization that technology may not save us. Between smart cities and automated vehicles that attempt to monetize what was formerly thought of as public life, through all manner of predatory algorithms, together with tech companies that perpetrate more quotidian crimes such as sexual and racial discrimination, the once glowing vision of the "Northern California ideology" seems to be burning up, along with half of that parched state which has long suffered from drought brought on by climate change.
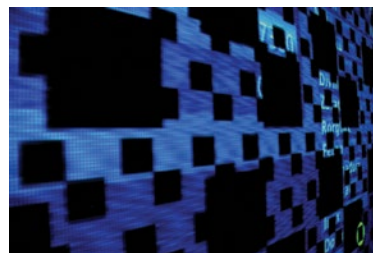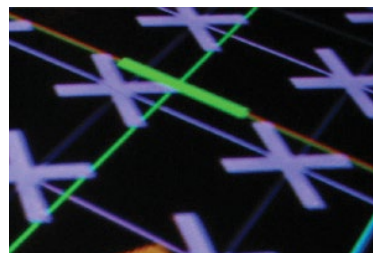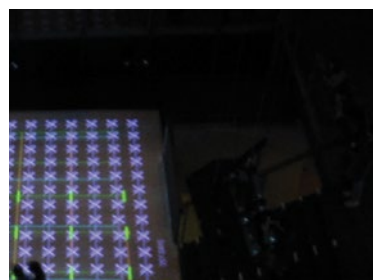
"Silicon Valley is Not Your Friend" announced a *New York Times* headline from 2018 which now seems almost hyperbolic. In describing Northern California's technological momentum as a "wrecking ball", the article goes to great lengths to prove that the IT industry's initial lofty aims "to build community and bring the world closer together" that accompanied the social media revolution suddenly appear to be in eclipse, a situation catalyzed not only by the immense power that a mere handful of corporations (Amazon, Apple, Facebook and Google) increasingly have over the planet but also by "Uberization" - the niche customization of human spatio-temporality through algorithmic forms of computational pattern detection and recognition that organize contemporary life. In the Hong Kong of 2019, this is hardly an understatement, with increasing fears that the Mainland Chinese police are using AI-based facial recognition to weed out protestors.

There is something deeper going on here, however, with a theme that *Counterpolis* plays on in a subtle but also seemingly pernicious way. In fact, the spectacle of moving and running bodies displayed on the ICC tower accompanied by the sounds of old-fashioned cash registers, digital noise and the panting breath of someone on the run suggests a melding between computational logic and corporeal experience – that these bodies made possible by a low-res but massive LED surface on the sixth tallest building in China are somehow part of the technosphere – that "collection of interlinked systems that comprise regional- to global-scale technology".[3]

According to environmental scientist Peter Haff who coined the term, the technosphere operates on the borders, never completely outside of human control but also never wholly within it either. For all intents and purposes, the technosphere is *autonomous*. It is a conglomeration hungrily fed by fossil fuels and high frequency trading, its operations ultimately inaccessible to the meddling of human agents (even though we are partially responsible for its existence) and exceedingly complex due to the dynamic intertwining of its constituent parts. While the technosphere can and must be influenced by humans, who are "essential" for its operation and maintenance, we are also subordinate parts, "The technosphere's operation…will tend to resist attempts to compromise its function".[4]

That biological life is now being shaped by and integrated into a technocracy that knows no limits, though excessive growth is not altogether a new concept. This understanding of the erasure of human experience in favour of machine calculation has been the rallying cry of a generation of philosophers of technology calling attention to the relentless rationalization of human life introduced in the mechanical age and now accelerated to breaking point by our current computational age. As economist Brian Arthur writes in *The Nature of Technology*, we have become increasingly aware that the systems, processes and apparatuses we create are ever more "interconnected and complicated", creating worlds that are "open, evolving, and yield emergent properties that are not predictable from their parts. The view we are moving to is no longer one of pure order".[5]

The architect and theorist Frederick Kiesler articulated these coming transformations in his 1939 essay 'On Correalism and Biotechnique: A Definition and Test of a New Approach to Building Design'. In this essay Kiesler declared that the transformation of technical life through biological systems would have a dramatic impact on what it would mean to be human. We extend life by way of the technical environment: forms of life have always been created and evolved, as Kiesler argues, through the interaction of organisms and tools, hence the architect's approach to building design is defined as "the bridge between man and the artificial, man made technological environment".[6]

It's important to acknowledge what and to whom Kiesler was referring in his article, namely another early experiment in the transformation of the human through technoscience. As Detlef Mertins, the late architectural historian of bios in early 20th century modernism argues, Kiesler's notion of what he called "coreality" was described as an "exchange of interacting forces", situating the "idea of the expanding human capacities within it".[7] To instantiate this, Kiesler honed in on an example from a strange experiment that took place at the Rockefeller Institute in New York City – the first mainstream experiment with culturing life. As he wrote,

In 1912, at the Rockefeller Institute for Medical Research, a hen's egg in process of hatching was opened. The developing chick was removed, and the tiny fleck of its heart was cut out. This bit of living tissue was transferred to a solution in a test tube. There, protected from germs, poisons, heat, and cold and provided with a never-failing supply of oxygen, sugar, and other nutrients, it lived and flourished far better than the heart cells in any living chick ever did.[8]

The protagonist at the heart of this science fiction-like episode was an American surgeon named Alexis Carrel. Carrel became interested in perfecting the techniques of growing cells *in vitro* – techniques developed already at the turn of the century by the Yale-based embryologist Ross Harrison. He was also tantalized by something else, namely the possibility of creating immortal life by being able to artificially nourish cells in a nutrient medium *outside of a body*. As sociologist Hannah Landecker writes: "by describing immortality as something that could be investigated empirically using a controlled system of cells growing in a nutrient medium and a glass vessel designed by the scientist, Carrel framed the concept as a tangible object of inquiry in the field of cell biology."[9]

Perth 2015. If you enter the John Curtin Gallery where the *Futile Labor* exhibition is running you eventually come into a dimly lit space filled with glass-topped display cases. Within these cases appears to be the detritus of medical experiments gone awry: culture dishes with stiches running down the middle, strange rubbery opaque objects, a metal contraption that has an attached box with large buttons and even larger LED indicator lights, and photocopied scientific papers. In the front of this museal room a large video screen tilted like a table reveals biological images – some kind of cellular form that appears to be twitching but does not reveal its source or what it is.

But one is quickly obliged to move from this space, finding oneself in a dim L-shaped hallway. There is something about this space that literally feels *wrong*. As one walks into the crepuscular light it feels like the floor beneath is literally moving – that each step is somehow magnified on the surface and below like a deep but not particularly loud booming.

Rounding the corner of this passage produces yet another surprise: a large and mostly darkened room with virtually nothing in it but a black cylindrical form positioned at its dead centre. At the top of this pedestal-like object is another undecipherable oddity: a milky 360-degree round screen constructed from two semi-circular pieces of frosted Plexiglas with a small slit on both sides. As one comes closer, the interior of this strange form is revealed – a glass-like apparatus replete with plastic tubing evolving out of its interior and flows of clear red liquid circulating through these hoses. This glass and mechanical object seems to act like a pump, with small spurts of red liquid occasionally pouring into the interior chamber.

But stepping back from this sculptural form, a more uncanny image appears. Reflected against the frosted plastic, we catch sight of a slight, pulsing form. Barely larger than a one-dollar coin, the fuzzy chimera-like impression seems to beat like a heart. The entire situation is a bizarre mix of the prosaic and the unnatural, and over time something else seems to be happening as well. Our own bodies, which felt a strange quality already walking through the passage that connected the earlier room with this new one, also now seem to vibrate. A feeling of almost queasiness gradually takes over us until we start to feel some kind of unexplainable presence – not from what we are looking at but instead from what seems to surround us.

What's happening here? As later revealed in an ethnographic account of the conception and making of the *Futile Labor* installation (initially called 'Tissue Engineered Muscle Actuators', or TEMA) in my 2015 book *Alien Agency: Experimental Encounters with Art in the Making*, the work described here involved the creation of a semi-living entity – a hybrid machine-organism consisting of a bundle of tissue-cultured C2C12 skeletal mouse muscle cells grown inside a custom design bioreactor. As the muscle tissue is electrically actuated (i.e., shocked), a sensor measures the change of force and displacement the
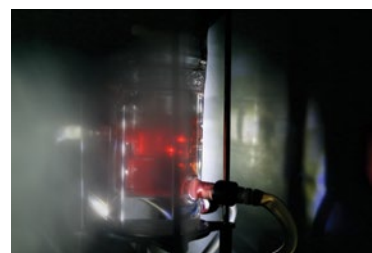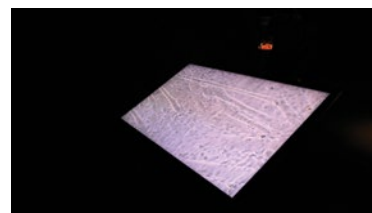
muscle cell produces and registers this to the computer. The resulting effect is one not based on human vision but instead on infrasonic vibration: large resonators placed in the corners of the last room vibrate whenever the muscle (the invisible life form inside the glass apparatus) begins to contract and expand.[10]

For all its theatrical trappings, *Futile Labor* basically manifests Kiesler's statement that "The question investigated in connection with the chick's heart is: at what point and by what means does inanimate matter pass over and become alive?" Life, according to him, can only make sense (in 1939 as today) when it is imagined as part of a technical environment.

The example of Alexis Carrel that Kiesler alludes to is a good foreshadowing of the posthumanist condition we live within at present. The late philosopher Jean Francois Lyotard's work on the so-called "postmodern condition", which took the literary and philosophical world by storm in the 1980s, gives us a jumping-off point to ask a pertinent question: what is the current state of the world? Originally commissioned by the Conseil des Universities of the government of Quebec as a report on the 'condition of knowledge in the most highly developed societies', *The Postmodern Condition* attempted to identify a particular facet of such societies – namely that within a general logic of calculation machines the "nature of knowledge cannot survive unchanged within this context of general transformation".[11] Knowledge thus can become "operational, only if learning is translated into quantities of information" and hence increasingly "exteriorized with respect to the knower".[12]

In a 1988 debate in *Le Monde* entitled 'Dialogue for a Time of Crisis', Lyotard went further. He explicitly made the claim that technoscience, which made tissue culture and an artwork like *Futile Labor* possible in the first place, is not only posthuman but "a-human". Scientists, including astronomers, physicists, genetic engineers and computer scientists "are already working," Lyotard claims, "towards preserving [a kind of] complexity under conditions of life independent of life on Earth". Such an "a-human" process "may have useful fringe benefits for humanity alongside its destructive effects. But this has nothing to do with the emancipation of human beings".[13]

But our own situation has advanced Lyotard's general observation about the increased exteriorization of human knowledge within the context of the "hegemony of computers". It portends a state of existence in which human beings are increasingly subordinated to and at the same time transformed by hybrid natural-technical forces. In this case the posthuman, as Lyotard argues, already originates in the Cold War histories of computing and cybernetics (as "language games" as he infamously put it) in which human traits like intelligence and reason are redefined as optimization procedures, utility functions and decision theory schemata. Intelligence is thus recast, as the social scientist and one of the founders of artificial intelligence Herbert Simon claimed, as a "design problem": that of problem representation, prediction of future behaviour and the construction of "rational" (symbolic) artefacts to solve such problems.[14]

The posthuman condition is not only a development foreseen by philosophy and studies of techno-science within Lyotard's advanced knowledge societies. As we see from *Counterpolis'* pixelated bodies, high atop the financial and now political event horizon that is Hong Kong, and from *Futile Labor*'s semi-living entities that operate psychologically and physically on our own fragile mortal coils, the posthumanist condition also invades and indeed haunts the realm of the aesthetic; in particular, that black magic of the new media arts that fuse human artistic expression with those exteriorized forms of knowing. Indeed, as ever more complex and autonomous feedback loops are designed and established between perceiver and the environment – ones that seems to go against the human creators as sole authors or experiencers of works – we will find that the posthuman and the technical environment will be increasingly enmeshed, co-dependent and co-constructive of each other.☐

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Do Astronauts Dream of Post-Earth?

Amanda du Prezz

What we do today depends on our image of the future rather than the future depending on what we do today.
- Ilya Prigogine, *Beyond Being and Becoming*

Immersed in an "image-dominated network society"[1] we are steadily flooded by images that saturate our public and private spaces and imaginations. One of those images that has recently filled our screens and minds is the image of the astronaut, particularly since this year we celebrate the 50th anniversary of the Apollo 11 Moon-landing in 1969. Last year saw the 50th anniversary of *2001: A Space Odyssey* (1968, Stanley Kubrick), which is probably still the gold standard in terms of representing outer space. During these past fifty years the image of the astronaut has been interpreted and staged for different political agendas and programs throughout the Cold War, nuclear threats, terrorism, and currently the ecological crisis. Over the past ten years the astronaut has gained considerable prominence, even urgency, through image production. The astronaut's image appears in and over several platforms, filling album covers,[2] showing up in advertisements, online memes and art exhibitions. Most notably, the astronaut has become a dominant theme in recent films, including *Interstellar* (2014, Christopher Nolan), *The Martian* (2015, Ridley Scott), *Approaching the Unknown* (2016), *Life* (2017, Daniel Espinosa), *Firs Man* (2018, Damien Chazelle) and, most recently, *Ad Astra* (2019, James Gray) and *Lucy in the Sky* (2019, Noah Hawley). The astronaut selfie or space selfie has likewise infiltrated social networking sites since Akihiko Hoshide shared his selfie during a spacewalk in 2012.

The purpose here is to explore the image of the contemporary astronaut, both hermeneutically and iconologically, as an agent that performs or reveals particular ideas and perceptions about human extinction and Earth in the Anthropocene. Some of these ideas and images are competing and opposing, but there is a dominant trope that can be identified, namely that of the lone heroic explorer in the service of expanding human knowledge and existence. It would be safe then to identify the astronaut as one of the dominant visual tropes that not only shapes or impresses itself on our imaginations in the present but importantly also expresses or puts forward a post-earth worldview. The perspective provided by the astronaut's image is not always glamorous or even utopian – in fact it is mostly sublimely stark – but it remains adventurous and the tone is exploratively heroic.

Dealing with the astronaut as an image is not a new venture, since being human is already to exist in-between: between the heavens and the Earth, standing with our feet on the ground while looking up towards the skies and marvelling at the stars. The idea of 'star traveling' inspired even the earliest stargazers to find their place in the great cosmos by plotting and navigating earthly life by the stars. Our contemporary fascination with the astronaut reveals an always already pessimistic disposition or inclination towards Earth, in that this fascination betrays not only our acceptance that we must leave Earth behind but in a sense having already evacuated. If the astronaut becomes one's idol then one has subtly (or perhaps not so subtly) slipped into what I would like to term a post-earth

modus. This is not to diminish the brute physical bravery of astronauts who put their lives in danger and often pay the ultimate price, nor to deny the many technical and scientific spin-offs gained from space travel research. As a famous icon (Figure 1), however, the astronaut embodies an encounter of displacement or departure from Earth. After all, does the contemporary popular image of the astronaut not make it 'cool' to dream of a post-earth life?

With its roots in the Latin *imago*, image refers not only to apparent imitation, likeness or representation but also suggests ghosts, apparitions, shadow, appearance, echo and, importantly, thought. Images thus manifest our conscious and unconscious hopes, repressed fears, dreams, fantasies, realities and nightmares. Images are implicated in ideas and vice versa: "idea", as W.J.T. Mitchell notes, derives from the Greek word "to see".[3] To see an image is also in some sense "to see" an idea, because ideas find likenesses in images. Through "abstract, general, spiritual 'likeness'"[4] images make visible what might otherwise have remained invisible. Images and ideas do not stand in a one-to-one correlation, however, but work more in a doubled or doubling relation.[5] To ask what the image of the astronaut makes visible is also then to ask what idea likeness is represented by the image of the astronaut? Does the astronaut reveal an optimism about our inter-galactic future? Is it a hopeful eagerness to leave Earth behind, or has the astronaut become a dystopian emblem heralding the bleak prospect of what Paul Virilio[6] terms an "extraterrestrial and exobiological" future? What type of world, in the Heideggerian sense, is imagined through the image of the astronaut?

Figure 1:
The iconic astronaut. Andy Warhol, *Moonwalk* (1987). Credits: ©The Andy Warhol Foundation for the Visual Arts

In what follows, the image of the astronaut is unpacked as both a visual and "apocalyptic trope"[7] that embodies collective dreams of going beyond Earth or of transcending Earth. The vision of leaving Earth behind is not a new conjecture.[8] Warnings of "world-alienation" in the age of science were already signalled by Hannah Arendt in 1958 in her reflections on the eagerness of scientists to forget that the "earth is the quintessence of the human condition" when in fact the "earthly nature"[9] may be unique in the universe in providing humans with a habitat where they can move and breathe unaided. Arendt showed that the devaluation of Earth, as a material necessity for our existence, in favour of the freedom of the human subject (freed from necessities), is a project of the modern world.[10] The trajectory of modern world alienation cannot be retraced here, but as the feminist scholar Bonnie Mann[11] shows, most body-unfriendly dreams of disembodiment treat the body as a form of imprisonment, just as those same presuppositions are transferred to the Earth as a form of prison-house.

This is not to argue that life beyond Earth is not possible: the many outer space missions undertaken have undoubtedly established that life is indeed possible in outer space, or rather can be sustained for limited periods. It is more a question of what type of life is possible post-earth? For even if life is sustainable in deep space, is it necessarily bearable? Even though the human label has become precarious within recent Anthropocene, non-human, post-human and interspecies debates,[12] and rightly so in many instances, it is necessary to inquire into the obvious question of whether we can still be considered to be human if we do go beyond Earth? Is being human, for better or worse, not intimately linked to the Earth, as Arendt suggests? Let me start by fleshing out what I mean by post-earth.
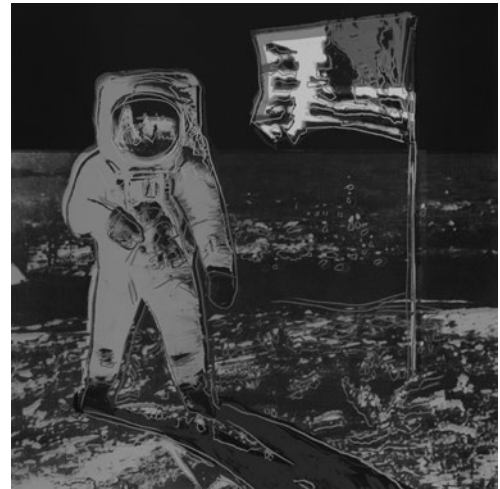
Post-Earth

Earth is a difficult concept on its own, let alone thinking about the meaning of post-earth. Naturally, I refer to Earth as a planet, "to emphasize", as Bonnie Mann[13] astutely observes, "[…] our brute, material dependence in relation to it", while also realizing that its planetary status does not exhaust the possible meanings of Earth. The image of Earth can be understood on the one hand as an "icon, index, and symbol of unity and planetary vitality and fragility", while on the other hand, viewed more critically, the Earth may sig-

nify "colonialism, imperialism, economic inequality".[14] The meaning of Earth as an image is not stable and is continuously open to interpretation. For instance, the image of Earth as the "Blue Marble" photographed by Apollo 17 in 1972 may have signified fragility and homeliness, while more recent representations of Earth show a gloomier view of the blue planet turning red and inhospitable due to global warming.[15] Given these cursory parameters regarding Earth, at least two connotations can be associated with the post-earth concept: the first is utopian in principle, involving a New Earth or New Eden that will be discovered to create a better world, while the second connotes a dystopian inversion of the first.

The concept of post-earth that is prevalent in my analysis is an initial dystopian reading that calls for subsequent utopian salvation. The dystopian version refers to recent estimations that our time on Earth is limited. We have experienced Earth Overshoot Day annually since 1987, marking the date in the current year by which humanity has consumed all the resources it takes nature a year to produce. In 2017 this Day was marked on 2 August. More recently, the late astrophysicist Stephen Hawking announced that humans would need to colonize another planet to survive.[16] The American journalist David Wallace-Wells[17] similarly predicts that "parts of the Earth will likely become close to uninhabitable, and other parts horrifically inhospitable, as soon as the end of this century". Post-earth in this context means no more Earth for humans, since we have exceeded its limits and seemingly overstayed our welcome. Hence the concept of a "post-human Earth"[18] as imagined in the film *After Earth* (2013, M Night Shyamalan), where humans return to Earth after their desertion and find it a perilous and unwelcoming place.

More importantly, however, post-earth refers to the bid to find a Super Earth to replace the now too polluted Mother Earth. Here it is the utopian dreams of locating a super planet that can sustain our increasing demand for consumption that take precedence. Elon Musk, the founder of SpaceX (Space Exploration Technologies Corporation), conjures a sci-fi city on Mars by 2024 – "long before NASA's projected timescale of the early 2030s".[19] Musk's "astrofuturist salvationism"[20] dictates that "there are two fundamental paths for mankind – that we stay on Earth forever, eventually succumbing to an extinction event, or to become a 'space bearing-civilization and a multi-planetary species'".[21] Musk is convinced that the latter option is the "right way to go".

No longer does Earth signal the centre of the universe (a conceit long since dismantled by Copernicus and Galileo), nor is it the location for the Axis of the World; rather the Earth now disappears on the sublime intergalactic horizons to become just an "earthly star",[22] a "Star Ark"[23] or "Spaceship Earth" orbiting around the Sun as "our supply ship".[24] Earth is no longer comprehended as a unique bio-habitat but rather as a spacecraft with limited resources. Once the resources have been consumed, the ship must be abandoned for another because, in Paul Virilio's words, "the Earth has become too small for Progress, it is also too small for short-term profit, as today's economic crash amply demonstrates", thus "mobiliz[ing] its resettlement" has become a matter of urgency.[25] The search for another planet ("extraterrestrial" and "exoplanetary") also implies that a change in our biology is required ("exobiological") and a new state of "transhumance" entered.[26] Not only are we in transit to (an)other planet(s) but also transitioning as a species to adapt to our new home(s). In this context, opting to stay on Earth seems "naïve and nostalgic",[27] even cowardly bio-conservative. Here the astronaut as a heroic and brave explorer willing to place his/her life in danger becomes significant in how dreams of post-earth are imagined.

The Astronaut

Derived from the Greek meaning "star sailor", or one who navigates the stars, the astronaut status, befitting the bravery requirement, seems mostly to favour a particular gender and race.[28] If we assume that space is empty and uncharted, we are reminded by Marie Lathers that space is always already "gendered territory" and thus "colonized by gender".[29] Although a short-lived attempt was made in the sixties to refer to female

space travellers as astronettes and astronautesses, these terms did not catch on (is it any wonder?) and have since become redundant, with the gender-neutral astronaut now applying to all genders in outer space.[30] (An exception is the case of space travellers from the Russian Space Agency, who are known as cosmonauts ("universe sailors").[31]

Colonizing outer space is also commonly driven by a specific political agenda and nationality, as became evident in the fierce Space Race during the Cold War between the Soviet Union, with Yuri Gagarin (the first man to orbit Earth in 1961), and the USA, with Buzz Aldrin and Neil Armstrong (the first two humans to land on the Moon in 1969). Currently, the space project has morphed into a Space Movement driven by "global operators"[32] from a hypermobile elite ensconced in their wealth who have given up on Earth. They invest venture capital in technologies that can guarantee their escape from "The Event" or apocalyptic environmental collapse.[33] For them, the astronaut is the vehicle of escape, or rather the invented saviour, a detached wanderer who forms part of a "select bold" band of "male pioneers bravely venturing where few would dare to go".[34] The astronaut has become a global celebrity and cultural icon of courage, someone to be admired and even secretly envied. For is the astronaut not the chosen one who has the (precarious) privilege of seeing the world from the outside? With this privilege comes the so-called "overview effect",[35] which causes a physical and psychological upset in the observer, perhaps because s/he has seen what no one should see or can tolerate seeing, namely Earth at a distance.[36] The resounding response is one of awe, or what can be defined as the cosmic sublime. In this sublime encounter, however, the astronaut is not confirmed as invincible or secured as master of the universe, as was usually the case in the modern transcendent sublime (à la Kant). Instead, entirely the opposite occurs during the overview effect, as the astronaut is humbled and perturbed in the face of seeing the whole at a glance.

In *Lucy in the Sky* (2019) it is precisely the overwhelming effect of seeing the world from up there that haunts astronaut Lucy Cola (Natalie Portman) upon returning to Earth (Figure 2). The film suggests that once a person is exposed to this overview sight they cannot merely return to down-to-earthiness. Phrased differently: once the whole has been observed, extracted from its constituent parts, it becomes extremely difficult to return to the parts while the whole looms in the background. This further implies that visions of post-earth, if we interpret the overview effect as such, do not necessarily bring salvation or consolation. Like most sublime encounters it only lasts a few seconds, after which it seems to unsettle and foster a deep sense of no longer belonging to Earth – or to post-earth for that matter. It is no longer possible to return to a state before (post-earth?), since it is impossible to unsee what has been seen.[37] The experiencer of the overview effect seems to be torn afterwards between the whole and the parts, between simultaneously being on Earth and post-earth in outer space. As Lucy's character admits, she "just feels a bit off" after seeing the "whole of the universe", because "everything (down) here looks so small". Earth is too small to contain her after this unlimiting experience and her nature as an in-between creature (always negotiating between heaven and earth, up and down) has been dislodged, turning her into a homeless vagabond.

Figure 2:
Astronaut Lucy Cola (Natalie Portman) enchanted by the overview effect in *Lucy in the Sky* (2019). Credits: Screengrab by author

A Man Without Qualities?

The typical astronaut is depicted full frontal, donning a space suit[38] with an impenetrable visor that deflects harmful radiation and which acts as a mirror that merely reflects whatever the astronaut encounters in front of him/her. The human face (or is it the humanity?) of the astronaut recedes behind the dark mask provided by the solar shield of the helmet (Figure 3). Similarly, the human voice is ventriloquized through a technological device to traverse the vacuum, confirming the astronaut's cyborgian status.[39] No partic-

ular markers identify the astronaut as male or female, queer or straight, black or white – nor as happy or sad for that matter. The astronaut seemingly abolishes all differences. As Zylinska observes:

This supposedly individuated Man remains undifferentiated, both sexually and biologically. Indeed, the Man of the tragic worldview achieves his status at the cost of sacrificing sexual and biological difference that is always more than one. Disavowing his kinship with women and those of nonbinary gender, with animals, microbes, and fungi, Man separates from "nature" to emerge standing, proudly erect, yet already threatened with contamination, shrinkage, and evanescence.[40]

The ostensibly gender-neutral astronaut reveals the face of a new supra-human being, or, as Joanna Zylinska identifies this new creature, *Project Man 2.0*, a being that has solved the mortality riddle and can survive in outer space – a being, in short, that has left behind both its nature and Nature.

The displacement is corroborated by the avalanche of images and memes of astronauts in which the reflective visor mirrors ominous landscapes and alien monsters. It is almost as if the astronaut is a being with no distinct attributes, an outer space reincarnation of Robert Musil's *The Man without Qualities* (1995)[41] – a clean slate onto which our collective dreams and fears of an offworld can be projected. This is not the face of any or every man or woman. It is not representative or democratic, though we may be tempted to think so, but rather the faceless future of post-humanity. True, when standing in front of the astronaut one may find

Figure 3:
The impenetrable visor of astronaut. Neil Armstrong on the Moon, *First Man* (2018). Credits: Screengrab by author

one's reflection mirrored in the glimmering helmet, and in that sense the astronaut may indeed be "us", although only momentarily. Even more disconcerting is that our eyes cannot meet those of the astronaut. It mostly remains a one-sided relationship of being seen without reciprocating the gaze, thus an alienating gaze. One may even speculate whether the astronaut is human at all.[42] As Nicholas Mirzoeff reflects on space selfies where the astronaut turns the impenetrable gaze on him/herself: "The astronaut is invisible and unknowable in his self-portrait. There is, it seems, more to seeing than being in the place to see".[43] We no longer need to be in a place or to be situated somewhere in order to see; we can see from everywhere and therefore also from nowhere. The astronaut has become a disembodied eye, hovering weightlessly.

Upon returning to Earth in the film *First Man*, we see Neil Armstrong (Ryan Gosling) in quarantine to protect him against disease and also to protect humanity from any viruses he may be carrying from outer space - thus, as Zylinska suggests, disavowing his kinship with other sexes, genders, species and living organisms. The film ends with a scene where he meets his wife for the first time after the "Out-of-this-World" expedition (her words to the press). They are not allowed to touch or meet in the flesh but have to communicate, sterilized, through an impenetrable glass wall (Figure 4). Armstrong resembles an alien species looking on while his human and Earth-bound wife reaches out her hand. He has been altered, modified and conceivably even trans-humanized by the experience. In a sense he has even become untouchable, suffering the same fate that the Lucy character (above) experiences after being dislodged between heaven and earth. Probably this is what the title of the film *First Man* implies: beyond the obvious first man on the moon connotation it also references the birth of a new Adam.

Figure 4:
Neil Armstrong and his wife, Janet Shearon meeting for the first time since his Moon-landing, *First Man* (2018). Credits: Screengrab by author

Where (on) Earth?

How is the astronaut depicted or positioned in terms of Earth? Compare, for instance, Buzz Aldrin's space selfie taken in 1966 (Figure 5) with that of the Japanese astronaut Aki

Hoshide taken thirty-six years later in December 2012 (Figure 6). The place of Earth in these images shifts significantly. Buzz Aldrin's selfie captures the status of an excited astronaut who has in some sense overcome time and space, a creature "which is less *in* the world than *out* of it"[44] (my italics) looking back from the outside to Earth. We see Aldrin's half-lit face with Mother Earth in the background. He has eclipsed the pull of gravity since Earth no longer represents the centre of his existence but has become a mere spectre on the horizon. The instant captured in this nascent selfie could on some level again (as above) be interpreted as the birth of a new type of man: the Skywalker, the man beyond earth – a post-earth creature.

Aldrin's self-portrait aims to seize this momentous event by declaring an awareness of this changed status. With a slight frown on his forehead, Aldrin stares into the future of humanity while Earth hovers in the background – a beautiful and serene backdrop to frame his extraterrestrial adventures.

In Hoshide's case we can no longer see his face since "any trace of his appearance or personality disappears in this image as his reflective visor shows us only what he is looking at – the International Space Station and below it, the Earth".[45] Earth can no longer be seen drifting serenely in the background but is now displaced to merge with Hoshide's face. As Virilio suggests, the world is no longer before us but is now behind us as we travel towards "extraplanetary emancipation".[46] Whereas the reference axis used to be centered outside of the self towards Earth, it has now shifted inside as "protruded man [turns] into a planet" onto himself. What is rising behind Hoshide's shoulder is the Sun (shining like a giant spotlight)[47] and no longer the Earth. The hubris of Icarus foretold by the myth is now embodied in the astronaut who no longer has Earth in view but instead has his sights on the Sun. Not surprising then that "the story of Icarus has often been accepted as the foundation myth of the aeronautic and astronautic adventure".[48]

Ascending or Descending?

Extravehicular activity (EVA) is one of the most popular images of the astronaut both in fact and fiction. This could be because the image confronts us with what is at stake in no uncertain terms beyond Earth's atmosphere. The EVA selfie shows the astronaut suspended in no gravity space dangling from a cord that connects the voyager to the spacecraft, sustaining life almost like an umbilical cord. In fact, the cord is termed an umbilical cord or umbilical because it supplies life-sustaining resources such as air and power for pressure suits. In the image of the first American EVA (Figure 7)[49] the golden cord is clearly visible while Earth appears almost womblike in the background. EVAs can also be untethered, with the astronaut moving independently through propulsion from the spacecraft. Here the symbolic umbilical cord fastening humanity to Mother Earth has finally been ruptured.

In spacewalking the astronaut is no longer "falling down" but instead is now "falling up"[50] as the reference axis to any gravitational localization has been disconnected. In the words of Goethe's Mephistopheles to Faust as he is send off into a realm outside of time and space: "Well then, descend! Or, if you wish, ascend- it makes no difference which I say. From finitude escape to realms where forms exist detached, where what has ceased to be can still afford delight."[51] But it is not only the "gravitational references" that are left behind in spacewalking but also "earth's spatio-temporal references": the astronaut is fixed in "the inertia of a dead centre" cut off from local time and the space world, becoming "an atrophied being [...] encapsulated in cosmic time [...] in an unprecedented inertia"[52] as time takes pre-eminence over real space. In the gripping *Approaching the Unknown* (2019) we see

Figure 5:
Buzz Aldrin took the first EVA selfie in 1966.
Credits: NASA/Buzz Aldrin

Figure 6:
Hoshide is taking a space selfie during extravehicular activity (EVA) on September 5, 2012, with the Sun behind him. Credits: NASA

Figure 7:
Astronaut tethered to spacecraft.
Ed White during first Extravehicular Activity in 1965. Tethered to the Gemini IV. Credits: NASA

how stoic Captain William D. Stanaforth (Mark Strong) travels to Mars "to bring life to it" (in his words). The film focuses mainly on Stanaforth's progression and decline into solitary confinement. His sense of time and place (or real space as Virilio distinguishes) becomes distorted, and he writes in his diary: "I can't tell I'm moving". He is caught "dead centre" in inertia. The speed at which he travels has no phenomenological meaning to him. Even more astonishing, during a conversation with his fellow female astronaut, Captain Emily Maddox on her way to join him in setting up a base for a future colony, as a complementary Eve to his Adam, he relates a dream. "I had a dream that I was falling. Ironic don't you think?" he asks – to which she quickly responds: "It is not a dream. You are falling."

If up or down have no scientific meaning in outer space then why does the astronaut dream of falling? Does Stanaforth's body remember and remind him of Earth where falling is inevitable? Is this also why he cannot fall asleep without nocturnal background noises from Earth of crickets and soothing waves. Perhaps, then, we cannot state conclusively that astronauts dream of post-earth; but it does appear they dream of falling, at least if the character in *Approaching the Unknown* is a signpost.

The Final Frontier

Insofar as outer space travel and exploration is an encounter with a frontier, and thus a pioneering endeavour of facing a border, space is often cited as "the final frontier". In other words, on our Earthly planet the frontiers of distance, oceans, air and land have been conquered through speed and technology. Compare, for instance, three images that unlock the pioneering encounter: Friedrich's *Wanderer Above the Sea Fog* and screenshots from *The Martian* and *Approaching the Unknown* (Figure 8).

Here the suggestion is that Earth is just another limit or boundary that can be crossed or transgressed. Just as mountains and other natural obstacles once held a challenge or resisted humanity, all of these have been conquered and mapped, as the Friedrich painting predicts. Earth as a whole should similarly not pose any problems or obstacles, since all that is required to go post-earth is a brave explorer. Earth no longer resists us. The remaining frontier is outer space. Naturally, the astronaut is the designated conqueror.

Having placed these images next to each other, maybe it is not even necessary to expand. They speak for themselves. Whether consciously or subconsciously, a particular trope has been internalized to announce the explorer or adventurer's encounter with an unknown frontier. The first is from the early nineteenth century, clad in a particular German Romantic notion of humanity's contact with Nature. The latter two follow the same pictorial formula, complete with a rock for the astronauts' feet to rest on in the *Approaching the Unknown* image. Robert Rosenblum writes that Friedrich's lofty paintings, of which *The Wanderer* is a prime example, immerse the viewer in a "supernatural domain" at the edge of the natural world, on "the brink of an abyss" where the "last outpost of the material world" can be observed.[53] The lone figure with his back to the viewer draws the viewer into the scene, and by implication it is the viewer who is confronting a dark alien void in outer space. In *Ad Astra* (2019) a similar reference is made by Donald Sutherland's character when he warns Roy McBride (Brad Pitt) that "the enemy up here [outer space] is not a person or a thing it's the endless void". Both examples evoke the ontological shock and amazement upon experiencing the threatening but thrilling unknown.

Conclusion

As has become evident from this analysis, it cannot be stated unequivocally that astronauts dream of post-earth. In fact, as the character of Captain Stanaforth from *Approaching the Unknown* has revealed, if anything they still dream of Earth and falling. This could be because our dreams, like our bodily rhythms and moods, are regulated by Earth – or even more pertinently, because all dreams of post-earth are incubated on Earth.

What the image of the astronaut does reveal, however, is that while leaving Earth

Figure 8:
Caspar David Friedrich, *Wanderer Above the Fog* (1818). Credits: Kunsthalle Hamburg, Hamburg, Germany
The Martian (2015). Credits: Screengrab by author
Approaching the Unknown (2016). Credits: Screengrab by author

behind is gruelling and puts the astronaut to the ultimate test of bravery, it can be done. This is because the dominant myth supports the idea that "up there is where our story is going to be told", according to *Ad Astra* (2019). Remaining on Earth apparently calls for no heroic glory or confrontation with the abyss. It is only post-earth where astronauts are turned into ascending gods.□

References:

1 Nicholas Mirzoeff, *How to See the World* (London: Pelican Books, 2016).

2 A random sampling of recently released albums featuring the astronaut includes Canyon Spells' album *Now that we're Gone* (2016), Erica's *Delta Moon* (2016), Delta Vega's *Breathe Real Slow* (2016), Falling in Reverse's *Coming Home* (2017), Mudface's *Awaken to Another Sun* (2019), Todd Burns's *Lunar Orbits* (2019), and The Rails' *Cancel the Sun* (2019).

3 William J. Thomas Mitchell, *Iconology: Image, Text, Ideology* (Chicago: University of Chicago Press, 1986), p. 5.

4 Ibid., p. 31.

5 Mitchell explains that images are not pictures, where a picture is a material image hanging on the wall aiming to mirror or translate the world directly, images are ideas, notions, concepts, and fears that are imagined. It is because they are imagined that images are not direct translations of ideas or vice versa but doubled through acts such as "imagin[ing] the activity of imagination" (op. cit., p. 5).

6 Paul Virilio, *The Futurism of the Instant: Stop-Eject* (Cambridge: Polity Press, 2010), p. 102.

7 Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018).

8 In fact, as Zylinska notes (ibid. Chapter 'Apocalypse, Now!'), we as humans have shared a habit for predicting the apocalypse throughout history. Predicting end times as part of "finalist thinking" has become a habit so as to introduce manipulating moralisms and power controls.

9 Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958), p. 2.

10 Arendt (ibid., p. 6) defines the modern age as a scientific venture that began "in the seventeenth century [and] came to an end at the beginning of the twentieth century; politically, the modern world, in which we live today, was born with the first atomic explosions".

11 Bonnie Mann, *Women's Liberation and the Sublime: Feminism, Postmodernism, Environment* (Oxford: Oxford University Press, 2006).

12 The concepts that dominate current debates include: "interspecies relationality" (Joanna Zylinska, "Bioethics Otherwise, or, How to Live with Machines, Humans, and Other Animals", in Tom Cohen, ed., *Telemorphosis: Theory in the Era of Climate Change* (University of Michigan Library, Ann Arbor: Open University Press, 2012), pp. 203-225; "co-evolution" and "co-emergence" (Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008); and "*zoe*-centred" (nonhuman life) as opposed to "*bios*-centred" (human life) (Rosi Braidotti, "The Critical Posthumanities; or, is Medianatures to Naturecultures as *Zoe* is to *Bios*?" *Cultural Politics* 12, no. 3 (2016), pp. 380-390).

13 Bonnie Mann, *Women's Liberation and the Sublime: Feminism, Postmodernism, Environment* (Oxford: Oxford University Press, 2006), p. 83.

14 Stefan Helmreich, "From Spaceship Earth to Google Ocean: Planetary Icons, Indexes, and Infrastructures," *Social Research* 78, no. 4, (2011), pp. 1211-1242.

15 See in this regard Bill McKibben's *Eaarth: Making a Life on a Tough New Planet* (New York: Times Books, 2010) wherein the changed Eaarth (to signify the changed nature of Earth) is discussed as no longer a "cozy" planet but rather "an inhospitable place".

16 Chelsea Gohd, "Stephen Hawking: Humans must Leave Earth within 600 Years," *Futurism.com* (November 7, 2017): https://futurism.com/stephen-hawking-humans-must-leave-earth-within-600-years

17 David Wallace-Wells, "The Uninhabitable Earth," *New York Magazine* (July 7, 2017):
 http://nymag.com/daily/intelligencer/2017/07/climate-change-earth-too-hot-for-humans.html

18 Gerry Canavan and Kim Stanley Robinson, *Green Planets: Ecology and Science Fiction* (Middletown CT: Wesleyan University Press, 2014)

19 Hannah Osborne, "Elon Musk Reveals Vision for SpaceX City on Mars," *Newsweek* (15 June, 2017): http://www.newsweek.com/elon-musk-mars-spacex-martian-city-625994.

20 Graham St John, "Astronauts, Psychonauts and Electronauts," D*ancecult: Journal of Electronic Dance Music Culture* 6, no. 2: https://dj.dancecult.net/index.php/rt/.

21 Hannah Osborne, "Elon Musk Reveals Vision for SpaceX City on Mars," *Newsweek* (June 15, 2017): http://www.newsweek.com/elon-musk-mars-spacex-martian-city-625994.

22 Buckminster Fuller, *Operating Manual for Spaceship Earth* (New York, NY: E.P. Dutton & Co., 1968).

23 Rachel Armstrong, ed., *Star Ark: A Living, Self-sustaining Starship.* (Switzerland: Springer Praxis Books, 2017).

24 See Buckminster Fuller's *Operating Manual for Spaceship Earth*, published in 1968, in which he proposes that life on Earth can be likened to life on a self-containing spaceship. Although in the case of our planetary spaceship we have not received an operation manual on how to live on the planet and we only learn this through trial and error. In fact, because life on Earth can be likened to living on a spaceship, Fuller states "We are all astronauts" (p.14). The astronaut becomes our normalised state according to Fuller's utopic interpretation.

25 Paul Virilio, *The Futurism of the Instant: Stop-Eject* (Cambridge: Polity Press, 2010), pp. 75-78.

26 Ibid. pp. 1-18.

27 Bonnie Mann, *Women's Liberation and the Sublime: Feminism, Postmodernism, Environment* (Oxford: Oxford University Press, 2006), p. x.

28 Men dominate by far, although NASA's latest class recruited in 2013 consists of 50% women. Men have also spent the most time in outer space, though interestingly enough in the case of America it is a woman who holds the record for spending the most time in outer space, namely Peggy Whitson, who spent 665 days in space.

29 Marie Lathers, *Space Oddities: Women and Outer Space in Popular Film and Culture, 1960–2000* (New York: Continuum, 2012), p. 210.

30 Cultural diversity has also been seemingly accommodated with the Indian word "vyomanaut" (vyomana [Sanskrit for sky and space] + naut) and the Chinese "taikonaut" (tai kong [Mandarin for outer space + naut). Recently the Afronaut has subsequently made an appearance on the radar with the first African astronaut, Mandla Maseko in 2015.

31 'Cosmonaut' is used by the Russian Space Agency; 'astronaut' is used by NASA, ESA, CSA, and JAXA.

32 Zygmunt Bauman, Liquid Love (Cambridge, UK: Polity Press, 2003).

33 Douglas Rushkoff, "Survival of the Richest. The Wealthy are Plotting to Leave us Behind," *Medium* 5 July 2018: https://medium.com/s/futurehuman/survival-of-the-richest-9ef6cddd0cc1.

34 Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018).

35 Zack Hatfield, "Seeing Red. The Act of Looking at Mars has Always been Precarious," *Real Life* September 7, 2017: http://reallifemag.com/seeing-red

36 The phenomenon of the overview effect has been carefully documented by Frank White in *The Overview Effect: Space Exploration and Human Evolution.* (American Institute of Aeronautics and Astronautics, 1998).

37 I realize this is a contentious issue. There are strong advocates for the positive effects and against the negative effects of returning to earth after experiencing the overview effect.

38 According to NASA's 'Spacesuits and Spacewalks' webpage , to put on a space suit is referred to as "donning the suit" and taking it off is referred to as "doffing the suit": https://www.nasa.gov/audience/foreducators/spacesuits/facts/index.html

39 The cyborg and the astronaut share a connected history, as the first explorations to create a cyborg had the aim of accommodating human survival in outer space. See Chris Hables Gray, Steven Mentor and Heidi J. Figueroa-Sarriera (eds.). *The Cyborg Handbook* (New York: Routledge, 1995).

40 Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018).

41 Robert Musil, *The Man Without Qualities, trans. Sophie Wilkens and Burton Pike* (London: Picador, 1995).

42 One of the interesting visual tropes in this regard is the widespread depiction of the astronaut's face as corresponding with that of death. In this sense the astronaut is viewed as no longer human.

43 Nicholas Mirzoeff, *How to See the World* (London: Pelican Books, 2016), p. 6.

44 Paul Virilio, *Open Sky* (London: Verso, 1997), p. 130.

45 Nicholas Mirzoeff, *How to See the World* (London: Pelican Books, 2016), p. 5.

46 Paul Virilio, *Open Sky* (London: Verso, 1997), p. 131.

47 Ibid., p.138. Virilio is quoting Buzz Aldrin here, who remarked: "On the moon, the sun shines on us like a giant spotlight."

48 Jacques Arnould, God, *The Moon and the Astronaut: Space Conquest and Theology,* trans. Dawn Cowlsey (Adelaide: ATF Theology, 2016), p. 100.

49 The first EVA was undertaken by the Russian cosmonaut Alexei Leonov in 1965.

50 Paul Virilio, *The Futurism of the Instant: Stop-Eject* (Cambridge: Polity Press, 2010), p. 52.

51 Johann Wolfgang von Goethe, *Faust I & II*, trans. Stuart Atkins (Princeton and Oxford: Princeton University Press, 2014), Line 6275.

52 Paul Virilio, *Open Sky* (London: Verso, 1997), p. 129.

53 Robert Rosenblum, *The Romantic Vision of Caspar David Friedrich: Paintings and Drawings from the USSR*, ed. Sabine Rewald (New York, NY: Metropolitan Museum of Art and the Art Institute of Chicago, 1990), pp. 8-11.

Posthumanism, biopolitics and contemporary art

Heather Dewey-Hagborg & Joerg Blumtritt

Joerg Blumtritt - **Biopunk**

There is nothing more convincing than the metaphors of contemporary technology and science. When steam engines run the world, thermodynamics becomes the analogy for everything, and the world will end in the heated death of entropy. Computers have moulded the world into bits, and virtual reality in people's imagination is much more effective than in the still quite physical reality of our mundane lives. In the '90s an all-connecting network that has no holes shifts the model of society from relations to connections. And today artificial intelligence will not only make us all unemployed but flips into the all-seeing eye, the all-knowing mind, by which we will finally understand what our mind is just before all of humankind is sucked into the matrix. DNA, "the code of life itself", finally offers the ultimate dream of the *machine celibataire*, the bachelor machine, elevating their inventors to the heavenly heights of the almighty creator. "And the evening and the morning were the sixth day."

Heather Dewey-Hagborg - **Lovesick**

What if love could spread like a virus?

Lovesick, a literal love virus. In 2019 I worked in collaboration with research scientists at Integral Molecular, a biotechnology company specialized in antibody discovery, to create a custom retrovirus that infects its human host with a gene that increases the production of oxytocin. The hormone oxytocin is implicated in feelings of love and bonding, monogamy and devotion, and the promotion of empathy and connection. The work is envisioned as an activist intervention to spread affection and attachment and to combat the alienation and hate of the present. It is my imagined solution to our post-Trump, post-Brexit crisis.

To contain the virus I designed small glass vials that can be broken open and consumed orally. The vials are shaped like different energy states of the oxytocin molecule. The form expresses the uniqueness of what the person is about to do, and in referencing the style of a cyanide capsule, also conveys the gravity and irreversibility of the act.

The installation consists of vials of the glowing virus, a video of the microscopic cells expressing their infection, and a piece of music based on a 14th century ballad by Francesco Landini that tells the story of a
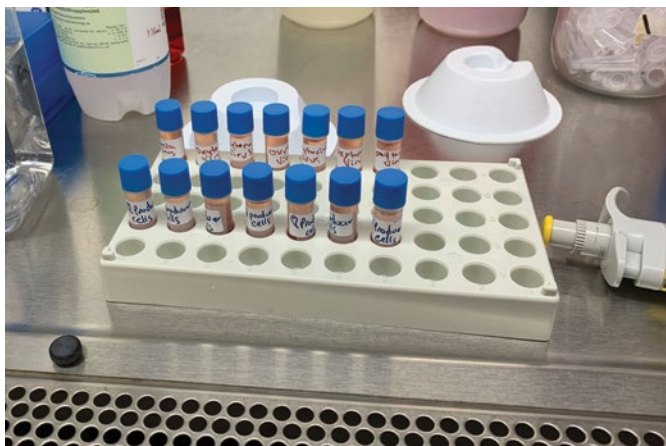
Making the lovesick virus
Photo: Dewey-Hagborg Heather

woman struggling with a love in vain. I have re-written the song to list instead the letters representing the proteins contained in the oxytocin molecule.

I imagine a lovesick future in which individuals, couples and groups consume this virus by smashing open the glass vials, pouring the fluid into their mouths, incubating it there for several seconds, then swallowing, while chanting together or humming to themselves "CYIQNCPL".

Now the virus is real. It is a lentivirus vector, hybridized with vesicular stomatitis and a plasmid containing genes for red fluorescent protein and oxytocin expression.

The cells you see are human. They have been infected with the virus and glow red as a form of expression. This is a virus that irreversibly alters human DNA to produce more oxytocin.

This, is lovesick.

Joerg Blumtritt - **Hormone heavens**

Lovesick has spread. At first the movement was driven by individuals (or, better, by couples of individuals) who self-improved by infecting. But it was not long before the early adopters start organizing. The love-infected called their cult "Geborgenheit", which in German means sanctuary or place of safety but also the feeling of being a child, safe with their mother, warm and cosy.

Geborgenheit's leader was a gender-nonconforming transhuman being - pronouns 'we', 'our' - who could be addressed by the name Wilma Penn. In the first two years, Geborgenheit was not unanimously welcomed. To name just a few opponents, men's rights activists, football players, bicycling extremists and salafist preachers all saw medically inevitable softness not as benign and motherly bondage but as serfdom. Geborgenheit was not a formal association, however: to claim membership it was sufficient to prove above-average oxytocin levels or, alternatively, the virus in one's blood serum. The testosterone fraction on the other hand would hardly have access to medical analytics and also lack broad support from the authorities. Thus, fighting their soft adversaries was almost impossible except for a few skirmishes. Wilma, however, was deeply sympathetic with the poor creatures still suffering from their testosterone-ridden nature. Under her leadership, the bio hacker elite of Geborgenheit advanced the Love Virus until is became contagious. It took less than a year to infect all humanity.

The following decade started promisingly. Violence dropped to near zero. Private car ownership was regarded as a necessary evil for poor people who could not live in densely populated areas. But over the months and years the joy started somehow developing a stale taste. Birth rates had plummeted. Infrastructure started to decay. It seemed incredibly hard to motivate people to take risks. The problem was not apparent at first, since it was mainly younger people who started Geborgenheit. For them the muffling properties of oxytocin were still sufficiently countered by higher levels of dopamine. But with an aging society that would find satisfaction in hugging and cuddling rather than in penetration and orgasms, propagation started to become a pressing issue. The world started to look rather bleak,
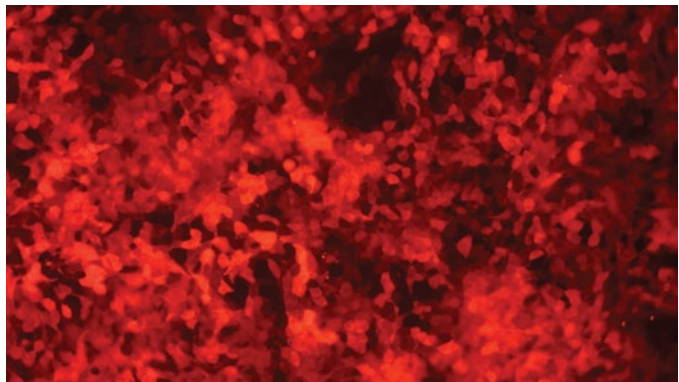
HEK293 cells expressing RFP 100x magnification
Photo: Dewey-Hagborg Heather
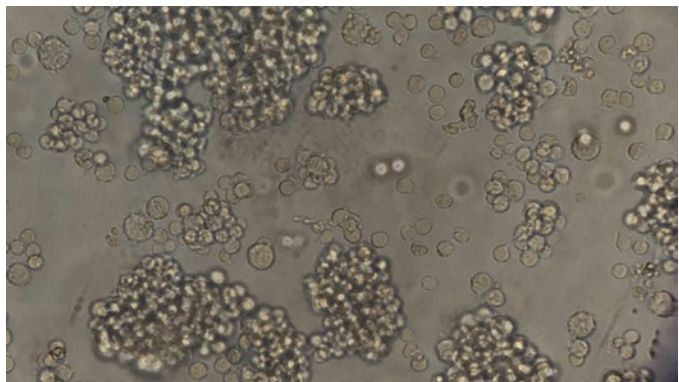
Jurkat cells brightfield 100x magnification
Photo: Dewey-Hagborg Heather

despite all the quilts, garlands and flowery scents.

Wilma again took the initiative: "We have become swarm beings, let's learn from the bees." The solution the Geborgenheit elite put forward was twofold. The first part was to create a working class caste of more clearly gender dichotomous individuals who would be genetically changed to become more driven and competitive without the leaning towards dominance. Metabolizing proteins fast - a bit like bodybuilders taking their soylent drinks during the "protein window" - and endocrinal caffeine flow, induced by viruses infecting the prostrate, were just two of the many transhuman enhancements the elite would come up with

This newly bred transhuman caste became the 'movers'.

While the creation of the movers indeed solved the problem of risk-taking and initiative, at the same time research feverishly continued to address the second issue: children. By learning from bees, the geneticists found a way forward, again guided by their ingenious leader Wilma. Only 15 years after the Love Virus was conceived, Geborgenheit's labs had grown the first generation of experimental transhumans capable of haploidic breeding. These asexual beings were called 'shakers'.

While movers and shakers resolved the immediate crisis, people old enough to remember the times before things turned soft were still nostalgic about physical intimacy. Taking the rather rough movers to be made having sex did not at all work for most - it lacked the drive, the feeling of the need to be intimate.

Geborgenheit would take humanity's desires very seriously. Everyone agreed that a world with intimacy would be even more desirable than the quiet world of brotherly love they had so far accomplished. Again, looking towards non-human animals who successfully manage to live in swarms gave the right hint: chemical communication. Glands were gene-spliced into the transhumans to ooze out and receive pheromones inducing sexual reactions in another being close by. The pheromonic synchronization worked so well that within just another decade the transhumans completely overcame any individuality. People were so much connected that they factually became one. At first this one-ness would only extend within one room; however, the long-lasting effects of limbic communication would bond people together even if they were disconnected. Scents would travel with people, sowing the feelings of their friends who stayed at home. The shakers would act more and more like a giant colonial organism - it was not the Leviathan but the birth of siphonophora.

About 25 years later, an unexpected incidence of gene drift would take place. The movers, despite their great energy and motivation, would still be very sociable - no comparison to the striving masculinity of old. Being active and self-sufficient yet capable of living closely together made them ideal astronauts. Capturing near-Earth asteroids in the terrestrial orbit required an enormous amount of labour. More and more movers would be sent into space, leaping from one asteroid to the next, populating the Moon, going further to Mars and Venus, and finally spreading all over the asteroid belt. The long separation from the alma mater of Geborgenheit over time would drive the movers more and more away from the grounded cosiness of the shakers. They evolved. Genetic engineering had bred in them great resilience to low gravity. With their limbs growing longer and longer they started to resemble the mantis. This drifting apart would, over time, have led to a total separation of transhumanity into two species. But history turned again.
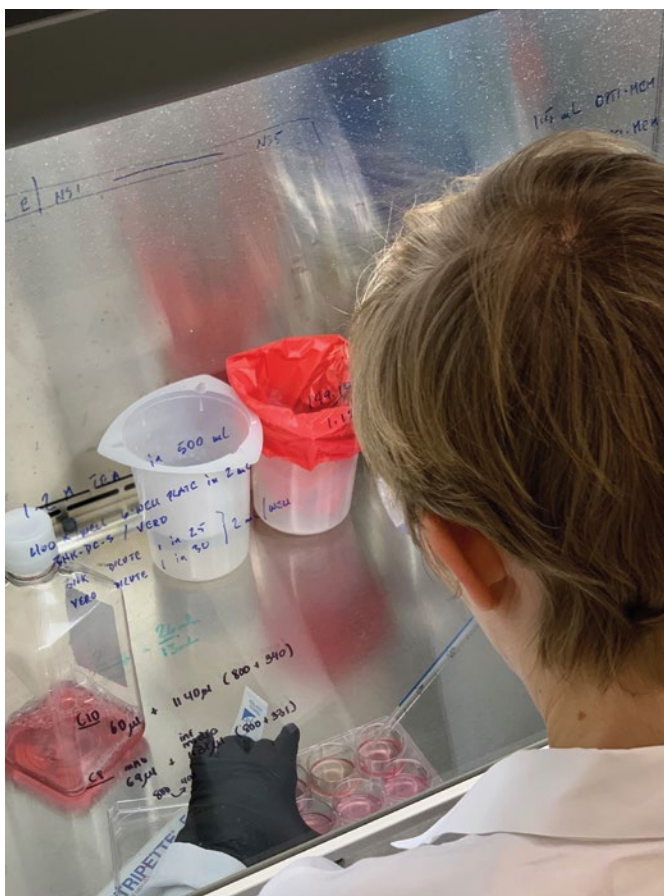
Making the lovesick virus
Photo: Dewey-Hagborg Heather

The celestial movers, even though their number was growing into the billions already, felt unsatisfied with the restrictions of the inner solar system. The Moon and Mars were just hostile rocks, while on Venus they could only float high above the surface in their cloud-based cities, the dense and caustic atmosphere making descent impossible. And the infinite vastness of the asteroid belt would be associated with strenuous and dangerous mining rather than exploration. The collective council of the Geborgenheit movers thus decided on a project for exploration of the outer solar system.

Sending ships to Jupiter, Saturn, and beyond, finally aiming for Proxima Centauri and Barnard's Star, required multi-generational ships. The movers were certainly too restless to find themselves suitable for such endeavours. After years of almost total radio silence, they would finally approach the surface population of the earth.

Building the enormous ships in outer space from the abundance of metal and carbon mined on the Moon and the asteroids was still a major task. The first colonial vessel, the Voyager, was completed exactly 100 years after the conception of the original Love Virus. Voyager would take transhumanity out to the final frontier that would never be reached, dropping their seeds along the way, populating the celestial bodies, and turning the solar system into their home - Himmlische Geborgenheit.

Messengers called 'Himmlische Boten' would be sent back and forth between Earth, the inner Solar system, and the new colonies. The Himmlische Geborgenheit would not rely solely on radio communications. It was clear that physical bonds also had to be maintained. Of course, the messengers would never make it within their lifetime. They would hand their dispatches over to their offspring. However, those were not written words but bodily scents that would speak an unmistakable language and that would hold each cell of the heavenly organism in place. What had started as humans and turned into movers and shakers now once again became once again an animal of cosmic dimensions-*physalia coelestia*.□
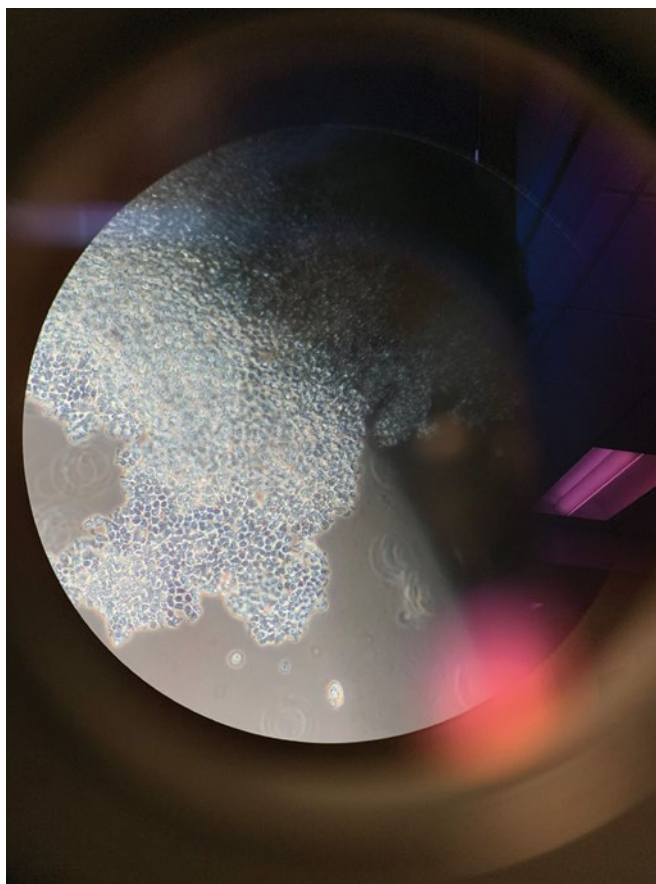
Jurkat Cells Brightfield 40x Magnification and Eyepiece Lens
Photo: Dewey-Hagborg Heather

Eduardo Kac

BIO ART

ABSTRACT

In 1997 I introduced the concept and the phrase "bio art", originally in relation to my artwork "Time Capsule" (1997).[1] This work approached the problem of wet interfaces and human hosting of digital memory through the implantation of a microchip. The work consisted of a microchip implant, seven sepia-toned photographs, a live television broadcast, a webcast, interactive telerobotic web-scanning of the implant, a remote database intervention, and additional display elements, including an X-ray of the implant. While "bio art" is applicable to a large gamut of in-vivo works that employ biological media, made by myself and others, in 1998, I started to employ the more focused term "transgenic art"[2] to describe a new art form based on the use of genetic engineering to create unique living beings. Art that manipulates or creates life must be pursued with great care, with acknowledgment of the complex issues it raises and, above all, with a commitment to respect, nurture, and love the life created. I have been creating and exhibiting a series of transgenic artworks since 1999. I have also been creating bio art that is not transgenic. The implications of this ongoing body of work have particular aesthetic and social ramifications, crossing several disciplines and providing material for further reflection and dialogue. What follows is an overview of theses works, the issues they evoke, and the debates they have elicited.

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For almost two decades my work has explored the boundaries between humans, animals, and robots.[3] Thus, transgenic art can be seen as a natural development of my previous work. In my telepresence art, developed since 1986, humans coexist with other humans and non-human animals through telerobotic bodies. In my biotelematic art, developed since 1994, biology and networking are no longer co-present but coupled so as to produce a hybrid of the living and the telematic. With transgenic art, developed since 1998, the animate and the technological can no longer be distinguished. The implications of this ongoing work have particular social ramifications, crossing several disciplines and providing material for further reflection and dialogue.

The presence of biotechnology will increasingly change from agricultural and pharmaceutical practices to a larger role in popular culture, just as the perception of the computer changed historically from an industrial device and military weapon to a communication, entertainment, and education tool. Terms formerly perceived as "technical", such as *megabytes* and *ram*, for example, have entered the vernacular. Likewise, jargon that today may seem out of place in ordinary discourse, such as *marker* and *plasmid*, for example, will simply be incorporated into the larger verbal landscape of everyday language. This is made clear by the fact that high school students in the United States already create transgenic bacteria routinely in school labs through affordable kits. The popularization of aspects of technical discourse inevitably brings with it the risk of dissemination of a reductive and instrumental ideological view of the world. Without ever relinquishing its right to formal experimentation and subjective inventiveness, art can, art *should* contribute to the development of alternative views of the world that resist dominant ideologies. In my work I subvert contemporary technologies — not to make detached comments on social change, but to *enact* critical views, to make present in the physical world invented new entities (artworks that include transgenic organisms) which seek to open a new space for both emotional and intellectual aesthetic experience.

I have been employing the phrase "bio art" since 1997, in reference to my own works that involved biological agency (as opposed to biological objecthood), such as "Time Capsule"[4] and "A-positive"[5], both presented in 1997. The difference between biological agency and biological objecthood is that the first involves an active principle while the second implies material self-containment. In 1998 I introduced the phrase "transgenic art" in a paper-manifesto with the same title and proposed the creation (and social integration) of a dog expressing green fluorescent protein. This protein is commonly used as a biomarker in genetic research; however, my goal was to use it primarily for its visual properties as a symbolic gesture, a social marker. The initial public response to the paper was curiosity laced with incredulity. The proposal was perfectly viable, but it seemed that few believed that the project could or would be realized. While I searched for venues that could assist me in creating the aforementioned project, entitled "GFP K-9", I too realized that canine reproductive technology was not developed enough at the time to enable me to create a dog expressing green fluorescent protein. More important than the canine specificity was the fact that my larger goal was to revisit the history of domestication in a new light and invent a new mammal—the first new mammal in the history of art. In the meantime, I started to develop a new transgenic art work, entitled "Genesis", which premiered at Ars Electronica '99.[6]

GENESIS

Genesis is a transgenic artwork that explores the intricate relationship between biology, belief systems, information technology, dialogical interaction, ethics, and the Internet. The key element of the work is an "artist's gene", a synthetic gene that was created by translating a sentence from the biblical book of Genesis into Morse Code, and converting the Morse Code into DNA base pairs according to a conversion principle I specially developed for this work. The sentence reads: "Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that

Eduardo Kac, Natural History of the Enigma, 2003/08. Transgenic artwork. Edunia, a plantimal with the artist's DNA expressed only in the red veins of the flower.
Photo Rik Sferra.

Eduardo Kac, Time Capsule, 1997. Mixed media, dimensions variable.
BEEP Electronic Art Collection, Madrid.
Photo: Carlos Fadon.

moves upon the earth." It was chosen for what it implies about the dubious notion--divinely sanctioned--of humanity's supremacy over nature. Morse code was chosen because, as the first example of the use of radiotelegraphy, it represents the dawn of the information age--the genesis of global communication. The Genesis gene was incorporated into bacteria, which were shown in the gallery. Participants on the Web could turn on an ultraviolet light in the gallery, causing real, biological mutations in the bacteria. This changed the biblical sentence in the bacteria. After the show, the DNA of the bacteria was translated back into Morse code, and then back into English. The mutation that took place in the DNA had changed the original sentence from the Bible. The mutated sentence was posted on the Genesis web site. In the context of the work, the ability to change the sentence is a symbolic gesture: it means that we do not accept its meaning in the form we inherited it, and that new meanings emerge as we seek to change it.

While presenting Genesis, I also gave a public lecture in the context of the symposium "Life Science", presented by Ars Electronica '99. My lecture focused on the "GFP K-9" proposal. To contextualize my presentation, I reviewed the long history of human-dog domestication and partnership, and pointed out the direct and strong human influence on the evolution of the dog up to the present day. Emphasizing that there are no packs of Poodles and Chihuahuas running in the wild, and that the creation of the dog out of the wolf was a technology -- a fact that we seemed to have lost conscience of -- I proceeded to point out the complex relationship between dogs and humans throughout their long history together, going back at least fourteen thousand years according to archeological records. While some showed support and appreciation for the work, others reacted against the project and voiced their position. The stage was set for a very productive dialogue, which was one of my original intentions. As I see it, the debate must go beyond official policy-making and academic research to encompass the general public, including artists. "GFP

K-9" was discussed in art magazines and books and science journals. Daily papers and general magazines also discussed the work in progress. While specialized publications showed greater appreciation for "GFP K-9", the response in the general media covered the whole gamut, from forthright rejection to consideration of multiple implications to unmistakable support. The shock generated by the proposal curiously caused one critic to declare "the end of art"[7]. As I see it, there's no reason to see the beginning of a new art as the end of anything.

GFP BUNNY

This pattern of response repeated itself, at a truly global scale, when I announced in 2000 the realization of my second transgenic work. Entitled "GFP Bunny", the work comprises the creation of a green fluorescent rabbit ("Alba"), the public dialogue generated by the project, and the social integration of the rabbit. This work was realized with the assistance of Louis Bec and Louis-Marie Houdebine. Louis Bec worked as the producer, coordinating the activities in France. Bec and I met at Ars Electronica (September 1999) and soon afterwards

he contacted Houdebine on my behalf, for the first time, to propose the project. Months later, in 2000, Alba was born, a gentle and healthy rabbit. As I stated in my paper entitled "GFP Bunny"[8], "transgenic art is a new art form based on the use of genetic engineering to create unique living beings. This must be done with great care, with acknowledgment of the complex issues thus raised and, above all, with a commitment to respect, nurture, and love the life thus created."

"GFP Bunny" attracted local media in the south of France in June 2000 when the former director of the French institute where Alba was born used his authority to overrule the scientists who worked on the project and refused to let Alba go to Avignon and then come to my family in Chicago. The arbitrary decision was made privately by one individual (the former director of the French institute where Alba was born). He never explained his reason for the refusal, so it remains unknown to this day. Bec and I denounced this censorship through the Internet and through interviews to the press.[9] If the objective was to silence the media, the result backfired. "GFP Bunny" became a global media scandal after a front-page article appeared in

Eduardo Kac, GFP Bunny, 2000. Transgenic artwork. Alba, the fluorescent rabbit

the Boston Globe,[10] sharing headlines with articles about the 2000 Olympics and US presidential debates. Articles about Alba were published in all major countries, with wire services further spreading the news worldwide.[11] Alba was also on the cover of Le Monde, San Francisco Chronicle and L'Espresso, among others. Der Spiegel and Chicago Tribune dedicated full pages to "GFP Bunny". She also appeared on the front page of the Arts section of the New York Times. Broadcasts by ABC TV, BBC Radio, and Radio France also took the Alba story to the whole planet. The relentless response to "GFP Bunny" has been equally intense and fascinating, with fruitful debate and both strong opposition and support. From October 15, 2000 to December 02, 2004, the "Alba Guestbook" collected general opinions about the work and expressions of support to bring Alba home.[12] Through lectures and symposia, Internet postings and email correspondence, the debate intensified and became richer, more subtle and nuanced, as I had hoped. The response to "GFP Bunny" constitutes extremely rich material, which I hope to revisit in the near future.

As part of my intercontinental custody battle to obtain Alba's release, between December 3 and December 13, 2000, I staged a public campaign in Paris, which included lectures, broadcasts, public and private meetings, and the public placement of a series of seven posters. I placed individual posters in several neighborhoods, including: Le Marais, Quartier Latin, Saint Germain, Champs de Mars, Bastille, Montparnasse, and Montmartre. The posters reflect some of the readings afforded by "GFP Bunny". They show the same image of Alba and I together, each topped by a different French word: Art, Médias, Science, Éthique, Religion, Nature, Famille. Between December 3 and December 13, 2000, parallel to radio (Radio France and Radio France Internationale), print (Le Monde, Libération, Transfert, Ça M'intéresse, Nova), and television (Canal+, Paris Première) interviews and debates, I posted these

images on the streets in an effort to intervene in the context of French public opinion and gather support for my cause to bring Alba home. I also engaged the public directly through a series of lectures (Sorbonne, École Normale Superior, École Superior des Beaux Arts, Forum des Images) and through face-to-face conversations on the street sparked by the public's interest. In total, I reached approximately 1.5 million people (about half of the population of Paris). This was an important step, as it allowed me to address the Parisian public directly. In 2001 I created "The Alba Flag", a white flag with the green rabbit silhouette, and started to fly it in front of my Chicago-area house. The flag not only signals publicly the home of the green bunny, but most importantly stands as a social marker, a beacon of her absence.

Continuing my efforts to raise awareness about Alba's plight and to obtain her freedom, in 2002 I presented a solo exhibition entitled "Free Alba!"[13] at Julia Friedman Gallery, in Chicago (May 3 - June 15, 2002). "Free Alba!" included a large body of new work comprised of large-scale color photographs, drawings, prints, Alba flags, and Alba t-shirts. Seen together for the first time were the posters from my public interventions in Paris (2000), an Alba flag flying outside the Gallery (2001), photographs that reclaim green bunny narratives circulated by global media (2001-02), drawings that reflect on our closeness to the "animal other" (2001-2002) and Alba t-shirts that extend Alba's cause beyond gallery's walls (2002). Through the leitmotif of the green bunny, this exhibition explored the poetics of life and evolution. The story of "GFP Bunny" was adapted and customized by news organizations worldwide, often generating new narratives that, both intentionally and unintentionally, reinstated or overlooked the facts. My "Free Alba!" exhibition featured photographs in which I reappropriated and recontextualized this vast coverage, exhibiting the productive tension that is generated when contemporary art enters the realm of daily news. The photo-

graphs in this series dramatize the fact that the reception of GFP Bunny was complex, taking place across cultures and in diverse locations. With her passing, I will continue to create new works through which I celebrate her life.

THE EIGHTH DAY, A TRANSGENIC ARTWORK

While in "GFP Bunny" I created a new mammal, in the transgenic work that followed, entitled "The Eighth Day", I investigated the new ecology of fluorescent creatures that is evolving worldwide. It was shown from October 25 to November 2, 2001 at the Institute for Studies in the Arts, Arizona State University, Tempe.[14] While fluorescent creatures are being developed in isolation in laboratories, seen collectively in this work for the first time they form the nucleus of a new and emerging synthetic bioluminescent ecosystem. The piece brings together living transgenic life forms and a biological robot (biobot) in an environment enclosed under a clear Plexiglas dome, thus making visible what it would be like if these creatures would in fact coexist in the world at large.

As the viewer walks into the gallery, she first sees a blue-glowing semisphere against a dark background. This semisphere is the 4-foot dome, aglow with its internal blue light. She also hears the recurring sounds of water washing ashore. This evokes the image of the Earth as seen from space. The water sounds both function as a metaphor for life on Earth (reinforced by the spherical blue image) and resonate with the video of moving water projected on the floor. In order to see "The Eighth Day" the viewer is invited to "walk on water".

In the gallery, visitors are able to see the terrarium with transgenic creatures both from inside and outside the dome. As they stand outside the dome looking in, someone online sees the space from the perspective of the biobot looking out, perceiving the transgenic environment as well as faces or bodies

of local viewers. An online computer in the gallery also gives local visitors an exact sense of what the experience is like remotely on the Internet.

Local viewers may temporarily believe that their gaze is the only human gaze contemplating the organisms in the dome. However, once they navigate the Web interface they realize that remote viewers can also experience the environment from a bird's eye point of view, looking down through a camera mounted above the dome. They can pan, tilt, and zoom, seeing humans, mice, plants, fish and the biobot up close. Thus, from the point of view of the online participant, local viewers become part of the ecology of living creatures featured in the work, as if enclosed in a websphere.

"The Eighth Day" presents an expansion of biodiversity beyond wildtype life forms. As a self-contained artificial ecology it resonates with the words in the title, which add one day to the period of creation of the world as narrated in the Judeo-Christian scriptures. All of the transgenic creatures in "The Eighth Day" are created with the same gene I used previously in "GFP Bunny" to create "Alba", a gene that allows all creatures to glow green under harmless blue light.[15] The transgenic creatures in "The Eighth Day" are GFP plants, GFP amoeba, GFP fish, and GFP mice. Selective breeding and mutation are two key evolutionary forces. "The Eighth Day" literally raises the question of transgenic evolution, since all organisms in the piece are mutations of their respective wildtype species and all were selected and bred for their GFP mutations.

"The Eighth Day" also includes a biological robot. A biobot is a robot with an active biological element within its body that is responsible for aspects of its behavior. The biobot created for "The Eighth Day" has a colony of GFP amoeba called Dyctiostelium discoideum as its "brain cells". These "brain cells" form a network within a bioreactor that constitutes the "brain structure" of the biobot. When amoebas divide, the biobot exhibits dynamic behavior inside the enclosed environment. Changes in the

amoebal colony (the "brain cells") of the biobot are monitored by it, and cause it to move about, throughout the exhibition. The biobot also functions as the avatar of Web participants inside the environment. Independent of the ascent and descent of the biobot, Web participants are able to control its audiovisual system with a pan-tilt actuator. The autonomous motion, which often causes the biobot to lean forward in different directions, provides Web participants with new perspectives of the environment.

The biobot's "amoebal brain" is visible through the transparent bioreactor body. In the gallery, visitors are able to see the terrarium with transgenic creatures from outside and inside the dome, as a computer in the gallery gives local visitors an exact sense of what the experience is like on the Internet. By enabling participants to experience the environment inside the dome from the point of view of the biobot, "The Eighth Day" creates a context in which participants can reflect on the meaning of a transgenic ecology from a first-person perspective.

MOVE 36

In "The Eighth Day", the biobot embodies a biological component to materialize a hybrid of the living and the non-living. Another way in which society has experienced the future abilities of machines was through Deep Blue, a computer that beat Chess world champion Gary Kasparov in 1997.[16] My transgenic artwork "Move 36" makes reference to Deep Blue's dramatic winning move. The competition between Kasparov and Deep Blue can be characterized as a match between the greatest chess player who ever lived against the greatest chess player who never lived. The work -- presented for the first time at the Exploratorium, in San Francisco, from February 26 to May 31, 2004 -- sheds light on the limits of the human mind and the increasing capabilities developed by computers and robots, inanimate beings whose actions often acquire a

force comparable to subjective human agency.

According to Kasparov, Deep Blue's quintessential moment in Game Two came at Move 36. Rather than making a move that was expected by viewers and commentators alike—a sound move that would have afforded immediate gratification--it made a move that was subtle and conceptual and, in the long run, better. Kasparov could not believe that a machine had made such a keen move. The game, in his mind, was lost.

The work presents a Chessboard made of earth (dark squares) and white sand (light squares) in the middle of the room. There are no chess pieces on the board. Positioned exactly where Deep Blue made its Move 36 is a plant whose genome incorporates a new gene that I created specifically for this work. The gene uses ASCII (the universal computer code for representing binary numbers as Roman characters, on- and off-line) to translate to the four bases of genetics Descartes' statement: "Cogito ergo sum" (I think therefore I am).

Through genetic modification, the leaves of the plants grow multiple plantlets. In the wild these leaves would be smooth. The "Cartesian gene" was coupled with a gene for the expression of the plantlets, so that the public can easily see with the naked eye that the "Cartesian gene" is expressed precisely where the plantlets grow.

The "Cartesian gene" was produced according to a new code I created especially for the work. In 8-bit ASCII, the letter C, for example, is: 01000011. Thus, the gene is created by the following association between genetic bases and binary digits:

A = 00
C = 01
G = 10
T = 11

The result is the following gene with 52 bases:

CAATCATTCACTCAGCCCCACAT-
TCACCCCAGCACTCATTCCATCCCCCATC
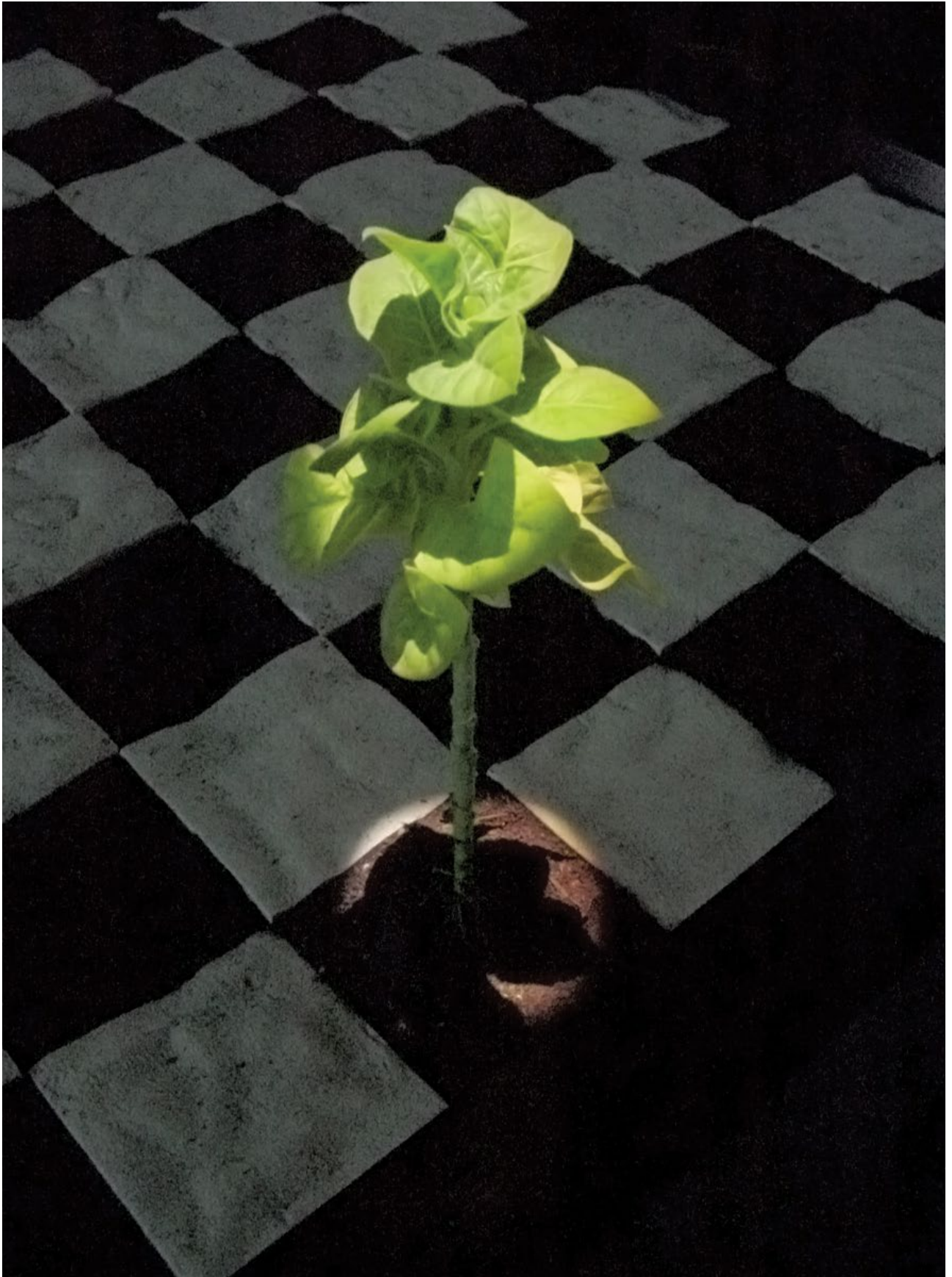
Eduardo Kac, Move 36, 2002/2004 (detail). Transgenic installation with looped digital video, dimensions variable.

The creation of this gene is a critical and ironic gesture, since Descartes considered the human mind a "ghost in the machine" (for him the body was a "machine"). His rationalist philosophy gave new impetus both to the mind-body split (Cartesian Dualism) and to the mathematical foundations of current computer technology.

The presence of this "Cartesian gene" in the plant, rooted precisely where the human lost to the machine, reveals the tenuous border between humanity, inanimate objects endowed with life-like qualities, and living organisms that encode digital information. A single focused light shines in a delicate luminous cone over the plant. Silent square video projections on two opposing walls contextualize the work, evoking two chess opponents in absentia. Each video projection is composed of a grid of small squares, resembling a chessboard. Each square shows short animated loops cycling at different intervals, thus creating a complex and carefully choreographed thread of movements. The viewer's cognitive engagement with the multiple visual possibilities presented on both projected boards subtly emulates the mapping of multiple paths in a chess match.

This work explores the poetics of real life and evolution; it is a game for phantasmic players, a philosophical statement uttered by a plant. "Move 36" gives continuity to my ongoing interventions at the boundaries between the living (human, non-human animals) and the non-living (machines, networks). Checkmating traditional notions, nature is revealed as an arena for the production of ideological conflict, and the physical sciences as a locus for the creation of science fictions.

SPECIMEN OF SECRECY ABOUT MARVELOUS DISCOVERIES

Expanding on ecological and evolutionary issues I previously explored in transgenic works such as "The Eighth Day", my "Specimen of Secrecy about Marvelous Discoveries" is a series of works comprised of what I call "biotopes", that is, living pieces that change during the exhibition in response to internal metabolism and environmental conditions, including temperature, relative humidity, airflow, and light levels in the exhibition space.[17] Each of my biotopes is literally a self-sustaining ecology comprised of thousands of very small living beings in a medium of earth, water, and other materials. I orchestrate the metabolism of this diverse microbial life in order to produce the constantly evolving living works. In embracing the mutability of unpredictable circumstances and evolving in response to human care and environmental conditions, the biotopes further develop dialogical principles that have been central to my work for over two decades.

The biotopes are a discrete ecology because within their world the microorganisms interact with and support each other (that is, the activities of one organism enable another to grow, and vice-versa). However, they are not entirely secluded from the outside world: the aerobic organisms within the biotope absorb oxygen from outside (while the anaerobic ones comfortably migrate to regions where air cannot reach).

A complex set of relationships emerge as the work unfolds, bringing together the internal dialogical interactions among the microorganisms in the biotope and the interaction of the biotope as a discrete unit with the external world.

The biotope is what I call a "nomadic ecology", that is, an ecological system that interacts with its surroundings as it travels around the world. Every time a biotope migrates from one location to another, the very act of transporting it causes an unpredictable redistribution of the microorganisms inside it (due to the constant physical agitation inherent in the course of a trip). Once in place, the biotope self-regulates with internal migrations, metabolic exchanges, and material settling. Extended presence in a single location might yield a different behavior, possibly resulting in regions of settlement and color concentration.

The biotope is affected by several factors, including the very presence of viewers, which can increase the temperature in the room (warm bodies) and release other microorganisms into the air (breathing, sneezing).

I consider the exhibition opening as the birth of a given biotope. Once an exhibition begins, I allow the microorganisms in suspended animation to become active again. From that point on I no longer intervene. The work becomes progressively different, changing every day, every week, every month.

When the viewer looks at a biotope, she sees what could be described as an "image". However, since this "image" is always evolving into its next transformative state, the perceived "stillness" is more a consequence of the conditions of observation (limits of the human perception, ephemeral presence of the viewer in the gallery) than an internal material property of the biotope. Viewers looking at the biotope another day will see a different "image". Given the cyclical nature of this "image", each "image" seen at a given time is but a moment in the evolution of the work, an ephemeral snapshot of the biotope metabolic state, a scopic interface for human intimacy.

Each of my "biotopes" explores what I call "biological time", which is time manifested throughout the life cycle of a being itself, in vivo (contrary to, say, the frozen time of painting or photography, the montaged time of film or video, or the real time of a telecommunications event).

This open process continuously transforms the image and may, depending on factors such as lighting conditions and exhibition length, result in its effacement — until the cycle begins again.

The biotope's cycle begins when I produce the self-contained body by integrating microorganisms and nutrient-rich media. In the next step, I control the amount of energy the microorganisms receive in order to keep some of them active and others in suspended animation. This results in what the

viewer may momentarily perceive as a still image. However, even if the image seems "still," the work is constantly evolving and is never physically the same. Only time-lapse video can reveal the transformation undergone by a given biotope in the course of its slow change and evolution.

To only think of a biotope in terms of microscopic living beings is extremely limiting. While it is also possible to describe a human being in terms of cells, a person is much more than an agglomerate of cells. A person is a whole, not the sum of parts. We shall not confuse our ability to describe a living entity in a given manner (e.g., as an object composed of discrete parts) with the phenomenological consideration of what it is like to be that entity, for that entity. The biotope is a whole. Its presence and overall behavior is that of a new entity that is at once an artwork and a new living being. It is with this bioambiguity that it manifests itself. It is as a whole that the biotope behaves and seeks to satisfy its needs. The biotope asks for light and, occasionally, water. In this sense, it is an artwork that asks for the participation of the viewer in the form of personal care. Like a pet, it will keep company and will produce more colors in response to the care it receives. Like a plant, it will respond to light. Like a machine, it is programmed to function according to a specific feedback principle (e.g., expose it to more heat and it will grow more). Like an object, it can be boxed and transported. Like an animal with an exoskeleton, it is multicellular, has fixed bodily structure and is singular. What is the biotope? It is its plural ontological condition that makes it unique.

NATURAL HISTORY OF THE ENIGMA

The intimacy and personal interaction that characterize our relationship with the biotopes are also present, but take a different turn in "Natural History of the Enigma". This series is centered on what I call a plantimal, a new life

form I created and named Edunia, a genetically-engineered flower that is a hybrid of myself and a petunia. The Edunia expresses my DNA exclusively in its red veins.

Developed between 2003 and 2008, and first exhibited from April 17 to June 21, 2009 at the Weisman Art Museum,[18] in Minneapolis, "Natural History of the Enigma" also encompasses a large-scale public sculpture, a print suite, photographs, and other works.

The new flower is a Petunia strain that I invented and produced through molecular biology. It is not found in nature. The Edunia has red veins on light pink petals and a gene of mine is expressed on every cell of its red veins[19], i.e., my gene produces a protein in the veins only.[20] The gene was isolated and sequenced from my blood. The petal pink background, against which the red veins stand out, is evocative of my own pinkish white skin tone that is due precisely to the blood that flows beneath it. The result of this molecular manipulation is a bloom that creates the living image of human blood rushing through the veins of a flower.

The gene I selected is responsible for the identification of foreign bodies. In this work, it is precisely that which identifies and rejects the other that I integrate into the other, thus creating a new kind of self that is partially flower and partially human.

"Natural History of the Enigma" uses the redness of blood and the redness of the plant's veins as a marker of our shared heritage in the wider spectrum of life. By combining human and plant DNA in a new flower, in a visually dramatic way (red expression of human DNA in the flower veins), I bring forth the realization of the contiguity of life between different species.

This work seeks to instill in the public a sense of wonder about this most amazing of phenomena we call "life". The general public may have no difficulty in considering how close we truly are to apes and other non-human animals, particularly those with which it is possible to communicate directly, such as

cats and dogs. However, the thought that we are also close to other life forms, including flora, will strike most as surprising.

While in the history of art one finds imaginative associations between anthropomorphic and botanical forms (as in the work of Archimboldo, for example), this parallel (between humans and plants) also belongs to the history of philosophy and to contemporary science. Advancing notions first articulated by Descartes, Julien Offray de La Mettrie (1709-1751) already proposed in his book *L'Homme Plante* [Man a Plant] (1748) that "the singular analogy between the plant and animal kingdoms has led me to the discovery that the principal parts of men and plants are the same." The preliminary sequencing of the human genome and that of a plant from the mustard family (Arabidopsis thaliana, in the journal Nature, December 14, 2000) have extended the artist's and the philosopher's analogies beyond their wildest dreams, into the deepest recesses of the human and plant cells. Both have revealed homologies between human and plant genetic sequences.

Thus, the key gesture of "Natural History of the Enigma" takes place at the molecular level. It is at once a physical realization (i.e., a new life created by an artist, *tout court*) and a symbolic gesture (i.e., ideas and emotions are evoked by the very existence of the flower).

I had a sample of my blood drawn and subsequently isolated a genetic sequence that is part of my immune system—the system that distinguishes self from non-self, i.e., protects against foreign molecules, disease, invaders – anything that is not me. To be more precise, I isolated a protein-coding sequence of my DNA from my Immunoglobulin (IgG) light chain (variable region).[21]

To create a Petunia with red veins in which my blood gene is expressed, I made a chimeric gene composed of my own DNA and a promoter to guide the red expression only in the flower's vascular system, not in the petals or the rest of the flower. In order to make my blood-derived DNA express only in the

red veins of the Petunia, I used Professor Neil Olszewski's CoYMV (Commelina Yellow Mottle Virus) Promoter, which drives gene expression exclusively in plant veins. Professor Olszewski is in the Department of Plant Biology at the University of Minnesota, St. Paul, MN.[22]

My IgG DNA is integrated into the chromosome of the Edunia. This means that every time that the Edunia is propagated through seeds my gene is present in the new flowers.

The sculpture that is part of "Natural History of the Enigma" is a three-dimensional fiberglass and metal form measuring 14'4" (height) x 20'4" (length) x 8'5" (width.) It contrasts the minute scale of the molecular procedure with the larger-than-life structure. Likewise, the work pairs the ephemeral quality of the living organism with the permanence of the large sculpture. The sculpture is directly connected to the flower because its form is an enlargement of unique forms found inside this invented flower. In other words, the sculpture is derived from the molecular procedure employed to create the flower.[23] In its hybridity, the sculpture reveals the proximity of our next of kin in the kingdom *Plantae*.

I used 3D imaging and rapid-prototyping to visualize this fusion protein as a tangible form. I created the visual choreography of the sculpture based on the flower's molecular uniqueness. The sculpture was created with a vocabulary of organic twists and turns, helices, sheets and other three-dimensional features common to all life. The sculpture is blood red, in connection to the starting point of the work (my blood) and the veinal coloration of the Edunia.

In anticipation of a future in which Edunias can be distributed socially and planted everywhere, I created a set of six lithographs entitled "Edunia Seed Packs". Visually resonant as they are with the flower and the work's theme, these images are meant to be used in the actual seed packs to be produced in the future. In my exhibition at the Weisman Art Museum, I exhibited a limited edition of Edunia seed packs containing actual Edunia seeds.

CYPHER

Similar to all of the preceding works discussed here (with the exception of the biotopes), "Cypher" is transgenic. It merges sculpture, artist's book and a DIY transgenic kit. The work measures approximately 13 x 17" and is contained in a stainless steel slipcase. When removed from the case, the kit — itself also made of stainless steel — opens up in two halves, like a book. Inside, the viewer/user finds a portable minilab. The kit contains Petri dishes, agar, nutrients, streaking loops, pipettes, test tubes, synthetic DNA (encoding in its genetic sequence a poem I wrote specifically for this artwork), and a booklet containing the transformation protocol—each in its respective compartment.

The work literally comes to life when the viewer/reader/user follows the protocol in the booklet and integrates the synthetic DNA into the bacteria (the "transformation"). The bacteria (normally pale) will then glow red, showing through this transgenic visual marker that the artwork is now alive. In bacterial division, two identical clone cells are always produced. After the transformation, the poem will be fully integrated into the bacteria's cellular machinery and therefore will be present in each newly reproduced bacterium.

"Cypher" visually hybridizes sculpture and artist's book : a three-dimensional metal object (with a velvety internal coating, finished by hand using industrial techniques and complemented with glass objects) is initially handled like a book, only to reveal itself as a nomadic laboratory. The key poetic gesture in "Cypher" is to place in the hands of the viewer the decision and the power to literally give life to the artwork.

The synthetic DNA in "Cypher" encodes in its genetic sequence a poem I wrote specifically for this artwork. The code replaces alphabetic letters included in the poem with short DNA sequences of two or three bases. The poem "Cypher" is composed with a high statistical incidence of the four letters that represent the four genetic bases Adenine, Cytosine, Guanine, and Thymine (i.e., A, C, G and T). The set of remaining letters is formed by four consonants and two vowels: these additional six letters were carefully selected to form a "code within the code" that serves as semantic counterpoint to the apparently enigmatic meaning of the poem. The result of this process is that poem and code complement each other in such a way that the code is absolutely integral to the poem. Both are included

Eduardo Kac, Cypher, 2009. DIY transgenic kit with Petri dishes, agar, nutrients, streaking loops, pipettes, test tubes, synthetic DNA, booklet, 13 x 17 in (33 x 43 cm). Photo: Nick Briz.

in the booklet present in the kit, thus enabling the viewer to discover this relationship while following the protocol to give life to the poem. The title manifests an anagrammatic relationship between sign and referent that is, itself, also part of the work.

"Cypher" is an artwork that presents itself as an invitation; it is a call to engage with a set of procedures that merge art and poetry, biological life and technology, reading/viewing and kinesthetic participation. This sculptural object's relationship to the book is enhanced by the fact that the title of the work is engraved on the spine of the slipcase and on the "cover" (the front of the kit). The work can go on a bookshelf and be clearly identified. When opened, the viewer discovers a complete transgenic kit. The participant reads the poem by transforming E. coli with the provided synthetic DNA. The act of reading is procedural. In following the outlined procedure, the participant creates a new kind of life—one that is at once literal and poetic.

CONCLUSION

The tangible and symbolic coexistence of the human and the transgenic, which I have developed in several of my works discussed above, shows that humans and other species are evolving in new ways. It dramatizes the need to develop new models with which to understand this change, and calls for the interrogation of difference, taking into account clones, transgenics, gene-edited beings and chimeras.

Although not all of the works discussed in this essay are transgenic, all of my bio art, from "Genesis" to "Cypher", explores our perceptions of what is "natural" and what is, by opposition, construed as "artificial", "abnormal," or "monstrous". The common belief that transgenics are unnatural is incorrect; it is important to understand that the processes of gene-editing and moving genes from one species to another are part of wild life beyond human intervention. A common example of this is

"agrobacterium"[24], which has the ability to transfer DNA into plant cells through the roots and integrate that DNA into the plant chromosome. Even humans have sequences in their genome that came from viruses and bacteria acquired through a long evolutionary history; we have DNA in our bodies from nonhuman organisms, thus, we are ourselves transgenic[25]. Before deciding that all transgenics are monstrous, humans must look within and come to terms with their own transgenic condition, their own "monstrosity".

But bio art, rather than commenting on what it means to create life, actually creates life. These works embody the absolute freedom of creation of poetry while simultaneously emerging from the sustained inquiry upon the world brought about through philosophical rigor. They make us question not only who we are as humans, but also what that physical identity means in the context of a wide universe of living beings. Bio art suggests that bucolic and idealized notions of what is "natural" must be challenged and the human role in the evolutionary history of other species (and vice versa) acknowledged, while at the same time respectfully and humbly marveling at this amazing phenomenon we call "life". □

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8. Eduardo Kac, "GFP Bunny," in *Eduardo Kac: Telepresence, Biotelematics, and Transgenic Art*, ed. Peter Tomaz Dobrila and Aleksandra Kostic (Maribor, Slovenia: KIBLA, 2000), 101-131. Also: <http://www.ekac.org/gfpbunny.html>.

9. I had proposed to live for one week with Alba in the Grenier à Sel, in Avignon, where

Louis Bec directed the art festival "Avignon Numérique". In an email broadcast in Europe on June 16, 2000, Bec wrote: "Contre notre volonté, le programme concernant «Artrans-génique», qui devait se dérouler du 19 au 25 juin, se trouve modifié. Une décision injustifiable nous prive de la présence de Bunny GFP, le lapin transgénique fluorescent que nous comptions présenter aux Avignonnais et à l'ensemble des personnes intéressées par les évolutions actuelles des pratiques artistiques. Malgré cette censure déguisée, l'artiste Eduardo Kac, auteur de ce projet, sera parmi nous et présentera sa démarche ainsi que l'ensemble de ses travaux. Un débat public permettra d'ouvrir une large réflexion sur les transformations du vivant opérées par les biotechnologies, tant dans les domaines artistiques et juridiques, qu'éthiques et économiques. Nous nous élevons de toute évidence contre le fait qu'il soit interdit aux citoyens d avoir accès aux développements scientifiques et culturels qui les concernent si directement."

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11. For a bibliography on transgenic art, see: <http://www.ekac.org/transartbiblio.html>.

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13. Lisa Stein, "New Kac Show Takes a Look at Ethics, Rabbit," *Chicago Tribune*, May 10, 2002, 21.

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15. In 2008, the scientists who developed GFP into a harmless and useful scientific tool received the Nobel Prize in Chemistry. One of the recipient scientists featured "GFP Bunny" in his Nobel lecture, also published in the 2008 Nobel Prize book. See: Chalfie, Martin. "GFP: Lighting Up Life", in: *The Nobel Prizes 2008*

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16. See: Elena Giulia Rossi. Eduardo Kac: Move 36 (Paris: Filigranes Éditions, 2005).

17. "Specimen of Secrecy About Marvelous Discoveries" premiered at the Singapore Biennale (4 September - 12 November 2006).

18. The exhibition was comprised of the actual Edunias, the complete "Edunia Seed Pack" set of six lithographs, and a limited edition of Edunia seed packs with actual Edunia seeds.

19. The gene of mine I used is an IgG fragment. Immunoglobulin G (IgG) is a kind of protein that function as an antibody. IgG is found in blood and other bodily fluids, and is used by the immune system to identify and neutralize foreign antigens. An antigen is a toxin or other foreign substance that provokes an immune response in the body, such as viruses, bacteria and allergens). In "Natural History of the Enigma", the fusion protein, produced exclusively in the red veins, is a fusion of my IgG fragment with GUS (an enzyme that allowed me to confirm the vascular expression of the gene).

20. In actuality, genes do not "produce" proteins. As Richard Lewontin clearly explains: "A DNA sequence does not specify protein, but only the amino acid sequence. The protein is one of a number of minimum free-energy foldings of the same amino acid chain, and the cellular milieu together with the translation process influences which of these foldings occurs." See: R. C. Lewontin, "In the Beginning Was the Word," *Science* 291, no. 16 (February 2001), 1264.

21. For her assistance in drawing my blood, isolating my IgG and cloning it, I owe a debt of gratitude to Bonita L. Baskin, who was, at the time I carried out this work, the CEO of Apptec Laboratory Services, St. Paul, MN. The blood was drawn for "Natural History of the Enigma" on May 13th, 2004 in the premises of Apptec Laboratory Services.

22. With the assistance of Professor Neil Olszewski, I obtained positive confirmation that my IgG protein was produced only in the edunia veins by detecting the activity of the enzyme GUS (beta glucuronidase), which is fused to the IgG sequence. The detection was achieved through a staining technique. This was further confirmed through PCR.

23. The sculpture's form is an invented protein composed of human and plant parts. The human part is a fragment of my Immunoglobulin (IgG) light chain (variable region). The plant component is from the Petunia's ANTHOCYAN-IN1 (AN1), responsible for red pigmentation in the flower. More precisely, AN1 is a transcription factor that controls genes encoding the enzymes that produce the red pigments.

24. This natural ability has made a genetical-

ly engineered version of the agrobacterium a favorite tool of molecular biology. See: L. Herrera-Estrella, Transfer and expression of foreign genes in plants. PhD thesis. (Laboratory of Genetics, Gent University, Belgium, 1983); P.J.J. Hooykaas and R.A. Shilperoort, "Agrobacterium and plant genetic engineering," Plant Molecular Biology 19 (1992), 15-38; J.R. Zupan and P.C. Zambryski, "Transfer of T-DNA from Agrobacterium to the plant cell," Plant Physiology 107 (1995), 1041-1047.

25. See T. A. Brown, Genomes (Oxford, UK : Bios Scientific Publishers, 1999), 138; and David Baltimore, "Our genome unveiled", Nature 409, no. 15 (February 2001), 814-816. In private email correspondence (28 January 2002), and as a follow up to our previous conversation on the topic, Dr. Jens Reich, Division of Genomic Informatics of the Max Delbruck Center in Berlin-Buch, stated: "The explanation for these massive [viral] inserts into our genome (which, incidentally, looks like a garbage bin anyway) is usually that these elements were acquired into germ cells by retrovirus infection and subsequent dispersion over the genome some 10 to 40 millions ago (as we still were early apes)." The HGP also suggests that humans have hundreds of bacterial genes in the genome. See: "Initial sequencing and analysis of the human genome," International Human Genome Sequencing Consortium v. 409, no. 6822 (February 15, 2001), 860. Of the 223 genes coding for proteins that are also present in bacteria and in vertebrates, 113 cases are believed to be confirmed. See p. 903 of the same issue. In the same correspondence mentioned above, Dr. Reich concluded: "It appears that it is not man, but all vertebrates who are transgenic in the sense that they acquired a gene from a microorganism."

A LENS ON THE RADICAL HORIZON

Saul Newman

Postanarchism and the posthuman horizon

Postanarchism has emerged as a central genre in contemporary radical political thought. While it has followed different paths and trajectories, it can generally be seen as a reformulation of the classical doctrine of anarchism through an engagement with poststructuralist theory. It acknowledges some of the key insights from thinkers like Michel Foucault, Jacques Derrida, Gilles Deleuze and Felix Guattari and Jacques Lacan, among others. In this sense, postanarchism can be understood as 'post-structuralist' anarchism. As I have argued elsewhere,[1] poststructural theory has important consequences for contemporary anarchism. While it presents a central challenge to the foundationalist ontology of the classical anarchism of the eighteenth and nineteenth centuries – particularly in terms of its assumptions about human nature and the possibilities of a rational social order – it also fosters a renewal of anarchism in ways that make it more relevant to contemporary forms of radical politics.

However, we would have to acknowledge that the radical political horizon today is highly opaque and uncertain. While the Occupation movements that emerged in the wake of the global financial crisis boldly experimented with alternative modes of political engagement, communication, assembly and democracy, they generally failed to bring

about any significant or lasting change. Instead, it would seem the more powerful reaction to the economic failures of neoliberalism has come from the populist and authoritarian right seeking to reanimate the phantasm of state sovereignty through racist and exclusionary discourses and policies. Both forms of politics, despite their differences, can be seen as a reaction to a liberal global economic order that has lost any sense of symbolic efficacy and is starting to fragment. What is revealed is the 'anarchy' at its core as it is increasingly incapable of managing the crises - economic and ecological - that it generates. No wonder the prevailing condition today is a deeply nihilistic one, as we are confronted with a social order that has lost its legitimacy, that can no longer rely on firm ideological or epistemological certainties.

Whether this can be seen as the ultimate outcome of 'postmodern condition' diagnosed long ago by J-F Lyotard[2] – a condition characterised by the collapse of the 'metanarrative' - is perhaps going too far. Rather, my claim is that the crises of the current moment are symptomatic of the end of the modern paradigm of humanism; in other words, the exhaustion of a particular way of seeing the world and our place within it. This paradigm was founded on anthropological certainties and a Promothean faith in human progress, technological development

and limitless economic growth. Yet today, as we are faced with imminent ecological collapse, we are forced to question not only our relationship with the natural world but also our own centrality and significance in a world that increasingly takes the form of a network, an entangled series of relations in which we are inexorably bound to one another, as well as to non-human life-forms and ecosystems, and even to material objects. As Cary Wolfe explains, posthumanism is the acknowledgement of the embeddedness of the human within broader social systems – natural, communicative, cultural, technological and so on – which blurs the binary division between the human and non-human, while at the same time giving greater meaning and specificity to the human condition.[3] It is to acknowledge that we are, as Wolfe puts it, fundamentally prosthetic creatures who have evolved with non-human forms which, paradoxically, are also what define what it is to be human. In my view, posthumanism should be distinguished from transhumanism, or any naïve enthusiasm about the capacities of technology to transform and enhance the human condition, whether in the form of cybernetics, new communicative technologies, bodily augmentation, or the AI revolution. Not only do these create the potential for unprecedented levels of social control and biomanipulation, they are simply an extension of the imperialism of the discourse of humanism articulated as the reign of technics. The claims of posthumanism, by contrast, are more modest and less celebratory. It is simply a recognition of the way we as humans are situated within, dependent upon and, to speak in Derridean terms, *supplemented* by networks, relations and lifeforms, both human and non-human, that are beyond our immediate control. This unsettles us, limits our sense of mastery and autonomy – or rather the illusion of autonomy in the strictly individualistic and anthropocentric sense – and forces an opening towards the other. This does not signify the end of the human experience, but rather an auto-critique or auto-deconstruction of the discursive limits of humanism. The ecological crisis and the threat of the

collapse of ecosystems upon which all human life depends is perhaps the clearest example of the decentring of Man from his world. Whether our long-term response to this will take the reactive or paranoid form we are witnessing at the moment, or result in the invention of new forms of commonality and solidarity with the natural and non-human world – which we are also seeing some signs of – remains to be seen.

What can anarchism – or as I prefer to call it postanarchism – tell us about the posthuman condition? And what forms of politics, ethics and culture emerge with this condition? In the section below, I outline some of the political and ethical contours of postanarchism.

Postanarchism: deconstruction and reconstruction

Postanarchism involves two main theoretical gestures. *Firstly*, it is a critical deconstruction of some of the epistemological limits of the nineteenth-century paradigm of classical anarchism. This was an anarchism borne of the revolutionary optimism of Enlightenment modernity. It was an anarchism that believed the revolution would emancipate the whole of humanity and transform the entirety of social relations, ushering in harmonious and cooperative forms of coexistence. Underlying this vision of social relations was the belief in an immanent rationality and morality - obscured and distorted by existing political and economic structures, as well as by religion and ideological mystification - that would be revealed once these artificial institutions had been overthrown. There was a belief in the inherent sociability of mankind which would form the basis of a self-governing community. This is why the political state was seen by anarchists as an unnecessary and destructive intrusion upon an otherwise rationally ordered society – an obstacle to human progress and flourishing. What is central to classical anarchism is a kind of Manichean logic that assumes an ontological separation between humanity and power. Power, embodied in the state and in other social institutions, was seen as an

alien coercive force that limits and distorts people's natural rational and moral capacities for freedom, development and sociability.

However, while classical anarchism, in its assumptions about human nature, is in many ways part of the humanist paradigm of modernity, it also goes beyond this. For instance, in Peter Kropotkin's idea of 'mutual aid'[4] we find ideas of solidarity and cooperation based on shared biological and evolutionary instincts between humans and non-humans – ideas which challenged the anthropocentric view of the world as well as a crude articulation of Darwinian theory that saw the natural (and social) world only in terms of the 'survival of the fittest'. The philosopher Catherine Malabou has recently sought to rethink Kropotkin's idea of mutual aid as a basis for social solidarity and political mutuality. Importantly, she argues, in contradistinction to post-anarchist critiques of Kropotkin's biological determinism,[5] that his evolutionary theory, which he derived from observations of animal species, disrupts the boundaries between philosophy, politics and biology, between the human and natural worlds. She says in an interview:

This would also give me the opportunity of questioning the frontier between traditional anarchism and what has been called post-anarchism, a grouping of several trends and lines of thought that seek to reconcile libertarianism with post-structuralism. Post-anarchism is very critical of thinkers like Kropotkin, whom they judge essentialist and rationalist because of his use of biology and evolutionism. Such a rejection is what I intend to challenge, thus renewing also Kropotkin's definition of mutual aid. In his work, mutual aid appears as the other trend of evolution, along with natural selection. Living beings do not only compete, they also help each other. Political mutuality keeps something of this biological memory. Mutual help is not only support and solidarity; it is self-management, cooperative economy, organic symbiosis or ecological

bioregionalism. So this is what I am currently exploring, showing that mutual help, or aid, does not constitute a *telos* in the traditional sense, but an emancipatory orientation.[6]

While I would insist that there is a rational *telos* at the heart of Kropotkin's evolutionary theory – something that at the same time drives its emancipatory politics – what I think is interesting in Malabou's interpretation of mutual aid is the way that it is oriented towards a posthuman terrain of interspecies cooperation and disrupts the neat boundaries between human and non-human lifeworlds.

Poststructuralism sharpens an auto-critique already immanent within anarchism itself. Indeed, poststructuralism, as I have suggested, might be seen as a kind of continuation of the anti-authoritarian impulse of anarchism itself, but turning its critique on discursive and epistemological authority and fixed identities. For Derrida, poststructuralism is an attempt to break with the 'chain of substitutions' that reaffirms the authority and determining power of a centre – whether that be God, man, consciousness, or even the structure of language itself.[7] In this sense, what unites the diverse strands of poststructuralism is the rejection of the discourse of essentialist humanism, or what Derrida would refer to as the metaphysics of presence: the idea that there is a fixed, determined and determining identity (whether it is Power, Man, Truth, the Good) behind or at the origin of the play of signifiers and social forces.

In view of this deconstructive approach, we must ask ourselves whether we can make the same assumptions about subjectivity held by the anarchists of the nineteenth century. Starting with Max Stirner, who argued that human essence was an ideological illusion, through to Foucault, who rejected any idea of a universal Subject behind the various historically specific ways in which subjectivity is constituted by power and discursive regimes of truth, the unity of the subject as a transhistorical entity has been placed in doubt. One of the key points to be taken from Foucault and other poststructuralist thinkers is

that there can be no ontological separation between the subject and external social forces, including power - since the subject who resists power is also in part constituted by it: "The man described for us, whom we are invited to free, is already in himself the effect of a subjection much more profound than himself."[8] The decentering of the subject is also present in the psychoanalytic theories of Jacques Lacan, who claimed that the subject is the subject of language as an external order of signifiers and is, moreover, founded on a fundamental lack – an incompleteness that propels the dialectic of desire without fulfillment. In a different way, Gilles Deleuze and Felix Guattari saw desire as a multiplicity of social forces that cut across and fragment the individual, connecting the human and non-human, man, animal and machine.

Poststructuralism also places in doubt the very idea of revolution itself, if by revolution we understand a total transformation of social, political and economic relations and liberation from power. Where and how a revolution can emerge from a field saturated and current power relations, and what it would be able to achieve, is a question we must ask ourselves. The idea of a revolution as a struggle aimed at overthrowing hierarchical power evades the way that in late modernity power relations are much more decentralised and complex, taking the form of a network rather than a centralised structure. Moreover, the notion of revolution was part of a modernist paradigm in which man acts on the world in a Promethean way and attempts to transform the entirety of social relations in one totalizing and collective political event. Invested in this fantasy of emancipation is the idea that revolution would liberate humanity, once and for all, from all kinds of oppressions and artificial limitations and usher in an eternal state of freedom and harmony. Instead, postanarchism embraces Foucault's insight that rather than speaking about 'liberation' we should think in terms of ongoing 'practices of freedom' that are engaged in a continual contestation with the power relations and limits that will exist in any post-revolutionary society.[9]

Today, the invention of alternative communities, ways of living, non-capitalistic forms of exchange based on the idea of the commons, and, above all, non-violent ways of relating to other living beings, both human and non-human, can all be seen as ethical 'practices of freedom' in this sense.

The encounter with poststructuralist theory no doubt poses certain problems for anarchism, particularly regarding the humanist epistemological and ontological limits within which it was initially framed. At the same time it presents the challenge to think about what anarchism might mean – as a political and ethical project - without the ontological certainties and moral and rational foundations it once relied upon. The *second* move central to postanarchism is therefore a 'reconstructive' one – an understanding of postanarchism as a positive political and ethical strategy or series of strategies that can inform contemporary radical struggles and movements. Below I outline a number of ethical coordinates for thinking about these new modes of radical political engagement:

Voluntary servitude

Perhaps the main ethical and political problem that postanarchism grapples with is what Étienne de La Boétie termed, several centuries ago, *servitude volontaire* – the phenomenon of voluntary obedience to tyrannical power. This is an obedience not coerced but freely given – and it is this which, as much for La Boétie in the sixteenth century as it remains for us today – the fundamental enigma of politics. The paradox of our time is one in which the decline of traditional structures of patriarchal authority and centralized political power is accompanied by ever greater levels of conformity, docility and obedience. The problem of voluntary servitude to some extent overturns the humanist assumption that man always desires freedom; rather, the project of freedom becomes an ethical problem to be worked through. However, the key insight to be taken from La Boétie's radical analysis of obedience is that power has no consistency or stability of its own but

is something entirely dependent on, indeed constituted by, our free acceptance of it. Power would not exist if we did not choose to obey it. Put more radically, power is an illusion created by our own identification with it; power, on its own, does not exist. This means that, just as the constitution of power is a matter of will and free volition, so too is its undoing. As La Boétie put it, "Resolve to serve no more, and you are at once freed".[10] We overcome power not by destroying it as such but by simply refusing to recognise it, by turning our backs on it; the reflexive illusion of power constituted by our own obedience is thus dispelled. Voluntary servitude reveals something we have all forgotten – that we are *already* free and we need only to realise it.

Singularities

We need another way of thinking about subjectivity that is no longer confined to identity. As Foucault put it, "maybe the target nowadays is not to discover who we are but to refuse who we are".[11] Even though certain marginalized identities, whether cultural, religious, sexual or gender, are so often subject to violence and oppression, the problem is that in confining one's struggle to a demand for recognition and inclusion within existing legal and institutional structures is a limitation of our political experience. The demand for recognition of marginalized and excluded identities is a form of neoliberal biopolitics that does little to challenge structures of domination, exploitation and violence. Instead, I suggest we think in terms of *singularities*. Singularities escape and slip between categories of identity. They are mutable, contingent and in a constant process of becoming - reconstituting themselves in relation to others and within networks of relations. Postanarchism places an emphasis on multiple forms of experimentation with different ways of living and relating to ourselves, on practices of ethical self-interrogation. Here I am partly indebted to Stirner's radical concepts of ownness and uniqueness. While these are often wrongly conflated with selfish egoism, Stirner understood the ego (or

what he called the 'unique one') in terms of an ongoing process of flux, becoming and self-constitution which for him was a deeply ethical undertaking because it sought a radical disengagement from the illusions of this world that diminished one's autonomy and uniqueness. Rather than this being a solipsistic experience, Stirner believed that clearing the ground of the ideological 'spooks' of humanism would open the way for new and more autonomous relations with the external world. However, we need to think more carefully about the encounter between singularity and community. One of the most important political tasks today is to invent new ideas of community that do not destroy difference and uniqueness but work to enhance it. Stirner's under-developed and paradoxical idea of the 'union of egoists' – a loose, rhizomatic collective association without any fixed identity or structure – points in this direction.[12] We could also consider more recent attempts within continental theory to rethink community in non-totalizing and non-exclusionary ways: Jean-Luc Nancy's 'inoperative community';[13] Roberto Esposito's notion of a non-immunitary communitas;[14] and Giorgio Agamben's references to 'whatever singularity' and 'the coming community',[15] which invoke the idea of gatherings and convergences that are not based on pre-defined identities (not based on 'who') – which are, in other words, indifferent to identity and are defined instead by their co-belonging.

Insurrection

We must also think about political action in new ways, and this is where the notion of insurrection becomes important. Following on from a number of themes outlined above, insurrection might be seen as a kind of revolt not so much against the external world of power – although that might be a consequence of it – but more so as a kind of ethical form of self-transformation, a revolt against fixed identities, modes of action and forms of life that power imposes upon us or which we have freely internalised. Again, I am indebted to Stirner here

and his idea of the Empörung (*Uprising*):

Revolution and insurrection must not be looked upon as synonymous. The former consists in an overturning of conditions, of the established condition or *status*, the state or society, and is accordingly a *political* or *social* act; the latter has indeed for its unavoidable consequence a transformation of circumstances, yet does not start from it but from men's discontent with themselves, is not an armed rising but a rising of individuals, a getting up without regard to the *arrangements* that spring from it. The Revolution aimed at new arrangements; insurrection leads us no longer to *let* ourselves be arranged, but to arrange ourselves, and sets no glittering hopes on 'institutions'. It is not a fight against the established, since, if it prospers, the established collapses of itself; it is only a working forth of me out of the established.[16]

While revolution works to transform external social and political conditions and institutions, insurrection is aimed at one's own self-transformation. To engage in an insurrection means placing oneself *above* external conditions and constraints, whereupon these constraints simply disintegrate. It starts from affirmation of the self, and the political consequences flow from this. Insurrection, unlike revolution, is radically anti-institutional – not necessarily in the sense of seeking to get rid of all institutions, as this would lead simply to different kinds of institutions emerging in their place – but rather in the sense of asserting one's power over institutions and, indeed, one's indifference to them. This notion of insurrection is radically different from most understandings of radical political action. It eschews the idea of an overarching project of emancipation or social transformation; freedom is not the end goal of insurrection but its starting point. What Stirner's notion of insurrection highlights is the extent to which we are often complicit in the systems of power we see as dominating.

Prefigurative politics

Perhaps we need to understand power not as a substance or a thing but as a relationship which we forge and renew everyday through our actions and our relations with others. As the anarchist Gustav Landauer put it: "The state is a social relationship; a certain way of people relating to one another. It can be destroyed by creating new social relationships; i.e., by people relating to one another differently."[17] He places the emphasis not so much on the revolutionary seizure or destruction of the external system of power as on a micro-political transformation of the self and its relation to others, and the creation of alternative and more autonomous relations – the result of which is the transcendence of state power. Here Landauer touches on one of the key ethical principles of anarchism – one also shared by postanarchism: prefiguration. Prefiguration is the idea that the type of politics one engages in should already reflect or *prefigure* the type of society, the kind of social relations, one wishes to create. Prefiguration is therefore a kind of anti-strategic and indeed ethical impulse: it is the idea that one's moral principles should not be sacrificed to the exigencies of politics, that the ends do not always justify the means. For instance, if you aim to build a society without violence, then you should not use violent means to achieve this; if you want a society without domination, then you should not employ authoritarian or vanguardist measures in one's revolutionary strategy. Understood in this way, prefiguration also means acting on the present, in the *here and now,* working to modify, at a micropolitical level, one's immediate environment and one's relations with others. As Bakunin argued in his debates with Marx and his followers in the First International, the use of authoritarian measures in a revolutionary struggles, and the instrumentalization of state power to build socialism, would only lead to a replication of the structures of state authority and an intensification of its power.

The notion of prefiguration can also tell us something important about critical art practices today. In transforming

collective spaces, in the relationships between artist and audience, between objects, images and spectators, artists also try to create a kind of insurrection in the present moment; they try to effect new forms of autonomous relations between people that are outside the immediate control of institutions, and who, in their very existence – even if temporary and confined to particular localised spaces – aim at the suspension of capitalist and state relations. In seeking to modify relationships in the aesthetic register, this has the potential to modify ethical and political relations as well. At the very least, they are designed to make us question and reflect ethically on our everyday behaviour, on our identity as subjects. In particular, the aim of many critical art practices is to foster relations of *non-domination* between individuals, and to develop non-hierarchical spaces. This kind of art not only attempts a reflection on the forms of biopolitical control, surveillance, data gathering and marketing techniques through which our subjectivity today is modulated,[18] but also encourages us to think about alternative ways of living and seeing ourselves which allow us to evade this kind of control.

Ecological entanglement

Postanarchism rejects an anthropocentric view of the world and embraces instead an entanglement with the non-human natural world. Of course, an ecological sensibility has never been alien to anarchist theory or practice. We think of the variants of anarchism which take into account our connections with the natural world: from Murray Bookchin's theory of social ecology which explored the interrelationship between ecological and social domination,[19] to even more radical elements of deep green ecology and anti-civilizational or primitivist anarchism.[20] Despite the major differences between these two approaches – and despite their shared hostility towards poststructuralism – both currents of anarchism are a rejection of the dualistic and anthropocentric view of the world. However, where postanarchism departs,

particularly from Bookchin's 'dialectical naturalism', is in rejecting the idea of a rational totality or wholeness that is somehow immanent within social relations and whose emergence will bring about a rational harmonisation of social forces and the full humanisation of Man. Bookchin says: "By wholeness, I mean varying levels of actualization, an unfolding of a wealth of particularities, that are latent in an as-yet-undeveloped potentiality. This potentiality may be a newly planted seed, a newly born infant, a newly born community, or a newly born society."[21] However, can we assume that the possibilities of human freedom lie rooted in the natural order, like a secret waiting to be discovered, like a flower waiting to blossom, to use Bookchin's metaphor? Can we assume that there is a rational unfolding of possibilities, driven, in a Hegelian manner, by a unified historical and social logic? This would seem to fall into the trap of essentialism, whereby there is a rational essence or being at the foundation of society whose truth we must perceive. There is an implicit positivism here, in which political and social phenomena are seen as conditioned by natural principles and scientifically observable conditions. Postanarchism expresses some scepticism about this view of a social order founded on deep rational principles. Rather than nature providing the basis for a stable and rational social order, ecological entanglement embodies indeterminacy and contingency; it means that all social identities now have be considered as part of an unstable, unpredictable network of relations, of ecosystems that are constantly changing and adapting and therefore disrupting any fixed or consistent image of a social order.

Ontological anarchy, or 'anarchaeology'

Many of the ideas and themes I have been outlining here are reflective of a condition that can be referred to as *ontological anarchy*. The Heideggerian thinker, Reiner Schürmann, defines anarchy as the withering away of the epochal first principles, the *arché* that defined metaphysical thinking:

> The anarchy that will be at issue here is the name of a history affecting the ground or foundation of action, a history where the bedrock yields and where it becomes obvious that the principle of cohesion, be it authoritarian or 'rational', is no longer anything more than a blank space deprived of legislative, normative, power.[22]

For Schürmann, this is an experience of freedom: it frees action from its *telos*, from fixed normative frameworks, from the rule of ends that hitherto sought to determine it. Action becomes 'anarchic' – that is to say, groundless and without a pre-determined end.

Foucault, in one of his lectures at the College de France from 1979-80, described his approach as 'anarchaeological'. It starts from the presupposition that "there is no universal, immediate, and obvious right that can everywhere and always support any kind of relation of power."[23] This is not the same as saying that all power is bad; rather it means that no form of power is *automatically* admissible or incontestable. This ethico-political standpoint is one that is largely consistent with most forms of anarchism. However, where it differs is in making the non-acceptability of power one's *point of departure* rather than where one finishes up. In other words, perhaps we need to think of anarchism today not so much as a specific revolutionary project but rather as an open and contingent form of action that takes the non-acceptance of power as its starting point. Can we understand anarchism as a politics that starts, rather than (necessarily) ends up with, anarchy? To quote Foucault: "it is not a question of having in view, at the end of a project, a society without power relations. It is rather a matter of putting non-power or the non-acceptability of power, not at the end of the enterprise, but rather at the beginning of the work in the form of a questioning of all the ways in which power is in actual fact accepted."[24]

So perhaps contemporary forms

of anarchism should be seen not as pre-determined by fixed objectives but rather founded on a certain contingency, open-endedness and freedom of thought and action. It may take different forms and follow different courses of action at different moments. It might resist and contest specific relations of power at localised points of intensity on the basis of their illegitimacy and violence; it might work against certain institutions and institutional practices by either working within and in support of other kinds of institutions, or through creating alternative practices and forms of organisation. In other words, taking anarchy or non-power as its starting point, postanarchism as a form of experimental and autonomous thinking and acting, can work on multiple fronts, in a variety of different settings, institutional and non-institutional, producing reversals and interruptions of existing relations of domination.

However, it would seem that the implications of ontological anarchy for radical politics today are highly ambiguous. On the one hand, anarchism must embrace the experience of anarchy and no longer rely on the firm ontological foundations once provided by humanism. Experience of the contemporary world suggests that the tectonic plates of our age are shifting, that familiar and once hegemonic institutions, principles and philosophical categories – economic, political and above all anthropological – appear increasingly empty, lifeless and obsolete. Never has political and financial power been in a more precarious position. Never before have we been confronted in such a dramatic way with the extreme consequences of the Anthropocene condition, whereby the survival of all species, including our own, is threatened. This makes possible – indeed necessitates – new and more autonomous forms of action, communication, economic exchange and being in common. On the other hand, this sense we all have of an increasingly dislocated world that is spinning off its hinges confronts us with immense and unparalleled dangers – the empty nihilism of the global capitalist machine and the appearance of apocalyptic and fascistic forms of politics that seem intent on hastening the coming disorder. The condition of ontological anarchy is always accompanied by the temptation to restore the principle of authority, to fill in its empty place with new proliferations of power. We realise that power itself has become dangerously anarchic.

Against this blind and nihilistic drive, anarchism today must affirm a kind of ethical care or even conservation of the networks and ecosystems in which we are entangled, for a natural world faced with ecological collapse, as well as cultivating and affirming new forms of life, community and autonomy which are already being made possible by the ontological rift opening before us.□

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Red Discussion 2, Chantal Mouffe 2
Nada Prlja, Ink on paper 50x35cm

Chantal Mouffe

Critical Artistic Practices: An Agonistic Approach

The central question that should be asked by artists aiming to challenge the status-quo is that of how artistic practices can still play a critical role in societies in which every critical gesture is quickly recuperated and neutralized by the dominant powers.

I would like to intervene in this debate with some reflections about the way to envisage the politics of artistic practices from the perspective of the hegemonic approach I have developed in my work. By bringing to the fore the discursive character of the social and the multiplicity of discursive practices through which 'our world' is constructed, the hegemonic approach is particularly fruitful when it comes to apprehending the relations between art and politics. It highlights the fact that the construction of a hegemony is not limited to traditional political institutions but also takes place in the multiplicity of places of what is usually called 'civil society'. This is where, as Antonio Gramsci showed, a particular conception of the world is established and a specific understanding of reality – which Gramsci refers to as the 'common sense' – is defined, providing the terrain in which specific forms of subjectivity are constructed. The domain of culture plays a crucial role, according to Gramsci, as one of the terrains where the 'common sense' is built and subjectivities are constructed. Such an approach reveals that artistic practices constitute an important terrain for the construction of political identities and that they contribute to the emergence of new forms of subjectivity. It allows us to grasp the decisive role that those practices could play in the counter-hegemonic struggle. What is at stake in this struggle is indeed the transformation of 'the common sense', understood as the space where specific forms of subjectivity are constructed.

I want to clarify that the hegemonic approach does not envisage the relation between art and politics in terms of two separately constituted fields, with art on one side and politics on the other, between which a relation would need to be established. As I have repeatedly emphasized, there is an aesthetic dimension in the political and there is a political dimension in art. Indeed from the point of view of the theory of hegemony, artistic practices play a role both in the constitution and maintenance of a given symbolic order or in its challenging, and this is why such practices necessarily have a political dimension. The political, for its part, concerns the symbolic ordering of social relations, and this is where its aesthetic dimension resides. This is why I do not think it is appropriate to make a distinction between art that is 'political' and art that would supposedly be 'non-political'. The difference is better expressed in terms of critical art.

Critical artistic practices are those that contribute in a variety of ways to unsettling the dominant hegemony and which play a part in the process of disarticulation/rearticulation that characterizes counter-hegemonic politics. Such counter-hegemonic politics aims at targeting the institutions that secure the dominant hegemony so as to bring about profound transformations in the way they function. This 'war of position' strategy (Gramsci) comprises a diversity of practices and interventions operating in a multiplicity of spaces: economic, legal, political and cultural. In the present conjuncture, with the decisive role played by the culture industries in the capitalist process of reproduction, the cultural and artistic terrain has become of ever-greater strategic importance as artistic and cultural production is currently so vital for capital valorization. This is due to the increasing reliance of post-Fordist capitalism on semiotic techniques to create the modes of subjectivation necessary for its reproduction. As Foucault pointed out, in modern production the control of souls is crucial in governing affects and passions because the forms of exploitation characteristic of the times when manual labour was dominant have been replaced by new ones that constantly call for the creation of new needs and incessant desires for the acquisition of goods. To maintain its hegemony the capitalist system needs to permanently mobilize people's desires and shape their identities; and the cultural terrain, with its various institutions, occupies a key position in this process. This is why the hegemonic perspective asserts that it is not by deserting the institutional terrain that critical artistic practices can contribute to the counter-hegemonic struggle but by engaging with it with the aim of fostering dissent. What is at stake in this struggle is the construction of a multiplicity of what I call 'agonistic' spaces, where the dominant consensus is subverted and where new modes of identification are made available. By

agonistic public spaces I mean public spaces where conflicting points of view are confronted without any possibility of a final reconciliation. Such an agonistic view challenges the widespread conception of the public space as a terrain in which one should aim at creating consensus. It is therefore very different from the concept of the 'public sphere' defended by Jürgen Habermas, who presented it as the site of deliberation aimed at achieving rational consensus. To be sure, Habermas has since accepted that, given the limitations of social life, it is improbable such a consensus could effectively be reached and now sees his 'ideal situation of communication' as a 'regulative idea'. However, from the perspective of the hegemonic approach, the impediments to the Habermasian ideal speech situation are not empirical but ontological. Indeed, one of the main tenets of this approach is that such a rational consensus is a conceptual impossibility because it presupposes the availability of consensus without exclusion, which is precisely what the hegemonic approach reveals to be impossible.

I would like to specify that we are never dealing with one single space. As I understand it, agonistic confrontation takes place in a multiplicity of discursive surfaces, and public spaces are always plural. I should also insist on a second important point, which is that while there is no underlying principle of unity and no predetermined centre to this diversity of spaces, there exist diverse forms of articulation among them and we are never confronted with the kind of dispersion envisaged by some postmodernist thinkers. Nor are we faced with the kind of 'smooth' space found in Deleuze and his followers. Public spaces are always striated and hegemonically structured. A given hegemony results from a specific articulation of a diversity of spaces and the hegemonic struggle also consists in an attempt to create a different form of articulation among public spaces.

For those who foster the creation of agonistic public spaces, critical art is constituted by manifold artistic practices aimed at bringing to the fore the existence of alternatives to the current post-political order. Its critical dimension consists in making visible what the dominant consensus tends to obscure and obliterate, giving a voice to those who are silenced within the framework of the existing hegemony. I would like to stress that, according to such a perspective, critical artistic practices do not seek to lift a supposedly false consciousness so as to reveal the 'true reality'. This would be completely at odds with the anti-essentialist premises of the theory of hegemony, which rejects the very idea of a 'true consciousness'. It is always through insertion in a plethora of practices, discourses and language games that specific forms of individualities are constructed. The transformation of political identities can never be the result of a rationalist appeal to the true interests of the subject. Such transformation consists rather in the inscription of the social agent in practices that mobilize its affects in a way that disarticulates the framework in which the dominant process of identification is taking place in order to bring about other forms of identification. This means that for the construction of oppositional identities it is not enough simply to foster a process of 'de-identification' and that a second move is necessary. To insist only on the first move is in fact to remain trapped in a problematic proposition according to which the negative moment would be sufficient on its own to bring about something positive – as if new subjectivities were already available and ready to emerge once the weight of the dominant ideology is lifted. Such a view, which informs many forms of critical art, fails to come to terms with the nature of the hegemonic struggle and the complex process of the construction of identities.

I contend that for all those who want to intervene in the cultural and artistic domain in a counter-hegemonic way it is crucial to visualize artistic practices as an articulation of discursive and affective elements. Contrary to rationalist approaches, such a perspective indicates that it is not by reaching understanding through concepts that artistic practices are able to bring about a transformation of subjectivity. Rather it is by their artic-ulation with affects that ideas can gain real force and crystallize in desires. This means that the impact of artistic practices should not be envisaged as occurring directly at the cognitive level. The object of artistic practices is not the production of concepts but the production of sensations, and thus the cognitive/ conceptual dimension should not be privileged. This does not mean that there is no cognitive dimension in artistic practices, but that it is via the affective dimension that the cognitive level should be reached. If we want to visualize how artistic practices can contribute to the subversion of the dominant hegemony, it is necessary to acknowledge their discursive/affective character, conceiving them as providing affections able to modify subjective structures.

For those who want to contribute to a radical politics of counter-hegemonic engagement with neo-liberal institutions, one important task is to cultivate a multiplicity of practices that would erode the common affects sustaining the current neo-liberal hegemony. Those practices should aim at fostering affects of a different nature. A counter-hegemonic politics necessitates the creation of a different regime of desires and affects so as to bring about a collective will sustained by common affects able to challenge the existing order. This is what I understand by the mobilization of passions, which I take to be a condition of the success of a progressive politics.

Unfortunately, left-parties generally do not understand the importance of mobilizing passions in a democratic direction. They believe this is something specific to the right and that they should limit themselves to rational arguments and deliberative procedures. This is why they are not able to answer the challenges posed by the rise of right-wing populist movements whose success is linked to the fact they understand much better than the left that politics is always partisan and that it requires the creation of an us/them relation. They are aware of the importance of constructing collective political identities and of fostering the development of a collective will. This is what explains the growing success of

populists in many European countries where they have managed to foster new forms of collective identifications about a notion of 'the people', constructed in a way that curtails democracy instead of radicalizing it. The best way to fight those parties is not by condemning their appeal to affects and accusing them of 'populism', however; it is a profound mistake to claim that democratic politics must be based exclusively on rational arguments and that it is necessary to expel passions from politics. I am convinced that such a stand represents the main obstacle in the elaboration of a strategy to challenge our post-democratic condition. What is at stake is the construction of a progressive collective able to crystallize affects aimed at the deepening of democracy, and critical artistic practices have a decisive role to play in this counter-hegemonic struggle.□

Sarah W. Sutton

Thinking Differently, with Creativity, Curiosity and Courage

Our work is to make the invisible visible:

An artist's images of dyed seaweed specimens lay out for us their biological architecture and beauty.

Another artist juxtaposes familiar historical furniture forms detritus from our consumption age.

Another's neon tracings on the exterior of a pump station illuminate the hidden workings of a municipal water system.

Yet others' photographs illustrate the rise of sea levels against Venetian backdrops, glacial retreat in the face of a warming climate, and the appearance of methane bubbles in the Arctic tundra.

Our work traditionally calls on us to be creative and curious as we bring ideas and information to places where others can see and appreciate it. And increasingly our modern work calls on us to be courageous - helping us act on what we can see.

We must speak to the World with a force that leaves no question. The invisible that we *must* make visible is the truth that as humans our power to understand and restore the biosphere is equal to or greater than our powers of wilful ignorance and destruction.

Heal the World

A few years ago now, the leadership of the American Alliance of Museum's Environment and Climate Network prepared a statement about the critical role of museums in building a thriving world. That statement was a call for institutions worldwide to see their mission not simply as tools for education or expression but for the benefit of humankind:

> Museums hold in one body the diverse physical and intellectual resources, abilities, creativity, freedom, and authority to foster the changes the world needs most: To help Earth, to heal the World.
> They do this using education, research, and creativity to mobilize collaborative and collective action for significant environmental impact so health, justice, and cultures flourish.[1]

We all can use our skills, abilities, creativity, freedom and authority where we find it to create art, to build knowledge and to foster connections that fulfil our institutions' missions in pursuit of the greater good. And we must all do more if we are to advance public understanding of climate change and the political will to do something important and bold about it. Each of us must help generate the hope that we humans can create such a transformation, and then we must all go about the business of making it happen.

Why Museums?

We know that museums prepare people to become critical thinkers. We know that museums in the United States, and likely in most places, are identified as trusted and safe spaces for the public. Progressive museums have invested in building skills to develop empathy among staff, visitors and the public. They have shown their willingness to take on inequality, injustice, diversity, equity and access. Progressive or not, many are already spaces for individual and community healing after terrible national events or local disasters. Museums, at their best, are ideally suited to help the public come to understand itself and the world around it - to know each other and to work together to solve the problems that affect them most.

In the Beginning

The museum field is at the relative beginning of this global journey. Research, industry and many governments are already far ahead of us. We have started too late, but at least we have started. To illustrate the scope and format of the field's work to support sustainable and restorative human life on Earth, we could use the night sky as a visual metaphor. Picture yourself at the edge of the Ocean looking out. In the night sky you see that there are many small bright stars (museums hard at work), and brilliant planets (those institutions saturated with advanced, integrated and networked efforts). Their pattern is interrupted by speeding satellites (the most courageous among us) and by the Milky Way (the view of our own galaxy, full of gas and dust, debris, and other stars and planets that we move among while trying

to understand our place). And there are vast areas of deep dark space (where we cannot tell if our field is active at all) and a black hole or two.

It does not matter what we do so much as that we are *doing*. Some of us lead breakthroughs in energy efficiency and generation; others bring about institutional change, from curatorial to shop sales, and operations to public engagement; some do their work out amongst the public and some do it mainly onsite. By a large margin, those who do this environmental and climate work are not only glad to have done it but are buoyed up by the experience and encouraged to do even more.

A contemporary art exhibition at the Florence Griswold Museum in Old Lyme, Connecticut, USA, brought big issues such as marine debris and pollution to land-based viewers and non-scientists who nevertheless care about our Ocean. Los Angeles' A + D museum partnered with this Californian city to create an urban resilience plan: a perfect match for a design museum, as we are all learning how to redesign our cities for resilience and for thriving. The Climate Museum in New York City sponsored 'Climate Signals', a hugely popular series of climate messages posted on portable, illuminated traffic-information signs distributed along the city's major roadways. WATERSHED+ was a multi-year public art project of temporary and permanent work created as an artist-municipality collaboration in Calgary, Canada, that explored how arts projects could create "emotional connections between citizens and their place in the environment".[2] These examples offer a glimpse of contemporary art's special role in helping the public look, see and think in new ways that support the development of creativity and sense of urgency that can lead to change.

What Are We Missing, Though?

Those who are not artists but researchers, climate activists and museum leaders must learn more about how aesthetics and aesthetic attitudes create brain space for discovery. In that space where new angles, information and illumination appear, there is room to learn to think differently.

In 2018, Shiralee Hudson Hill developed the *Anthropocene* exhibit at the Art Gallery of Ontario in partnership with three visual artists. Her thinking offers a glimpse into the kinds of impacts climate art can have on the public and the kind of research we must expand in order to build our case for more of this work. Starting from the position that "art activates emotions, memories, learning and meaning-making in the brain in unique and complex ways", offering unique possibilities for artists and museums to forge pathways to engagement, her approach was to use visual arts to encourage "individuals to make personal connections with issues of planetary change."[3]

That process has a risky by-product: climate grief and despair. Opening our minds to new information requires letting in the overwhelming news of the damage we have caused and the risks we face.

Climate grief and despair has become a global health issue that threatens any progress. Michael E. Mann, the climate scientist who created the famous 'hockey-stick graph' indicating the increasing concentrations of carbon in our atmosphere, recently tweeted: "The greatest threat I see to climate action is the paralysis that comes from disengagement, disillusionment, despair." In contrasting scale, the American Psychological Association's publication, *Mental Health and Our Changing Climate: Impacts, Implications, and Guidance*, warned: "[…] psychological responses to climate change, such as conflict avoidance, fatalism, fear, helplessness, and resignation are growing. These responses are keeping us, and our nation, from properly addressing the core causes of and solutions for our changing climate, and from building and supporting psychological resiliency."[4]

We are learning that climate grief and anxiety are a manifestation of a person's awareness of climate change, and that individual awareness and learning about climate change are necessary for beginning to build skills and foster necessary action. These emotions, if they are accepted and examined, can enhance learning; but it is positive messaging, not neutrality or 'doomism', that fosters continued conversations and engagement on climate issues. Hope is recognized as the best antidote for grief and despair, and collective action is the most powerful and supportive path towards hope *and* measurable impact, and that shared values and experiences lead to collective action that can scale meaningful and lasting change. These are all within museums' remit.

Clinical psychologist Leslie Davenport, author of *Emotional Resiliency in the Era of Climate Change – A Clinician's Guide*, gives 17 recommendations for addressing climate grief and despair. Eight of these recommendations are immediately achievable in museum settings:

-provide safe spaces for exploration
-facilitate inquiry into unexamined beliefs that interfere with regenerative work
-encourage connections to the natural world
-cultivate creativity in solutions
-teach communication skills
-validate grief
-teach self-care
-model community involvement.[5]

Will we use our institutional resources, alongside our creativity, curiosity and courage to do this work? We must.

While we pursue this creative and grief-fighting public work of raising awareness and motivating people to create change, there is also practical work to be done. We cannot ignore the physical impact of our buildings and operations on the planet. Our own energy use, primarily fossil-fuel-based, must surely be significant, but we still do not know what it is. There are likely 55,000 museums in the world, many providing air conditioning for the protection of collections and comfort of the public; all operating with lights and equipment and inviting a commuting workforce and public onsite. Other industries thoughtfully log and manage their carbon footprints, yet few do so in the museum world. The bright spots in this effort are the protocol developed by Julie's Bicycle, with the support of Arts Council England, and the

energy benchmarking work by Joyce Lee in the United States, in partnership with Energy Star Portfolio Manager and the Environmental Protection Agency. Both approaches offer tested ways to identify carbon impacts in ways that support measurable reductions. Much could be achieved if only more institutions would apply these approaches and if more countries contributed their own effective approaches.

The black hole in our night sky panorama, however, is the lack of engagement worldwide with the discussion and recommendations to adopt science-based standards of care for collections that acknowledge the needs of collections, the realities of our buildings, and the responsibly to reduce our impacts on the planet.[6] These recommendations come *from within our field*, from the ICOM-CC and the IIC, and include the work of what is known as The Bizot Group. These reports declare that "The conservation profession has come together and agreed a position on environmental guidelines" and that:

-The issue of museum sustainability is much broader than the discussion about environmental standards, and needs to be a key underlying criterion of future principles.
-Museums and collecting institutions should seek to reduce their carbon footprint and environmental impact to mitigate climate change by reducing their energy use and examining alternative renewable energy sources.

Where tradition adheres to a strict, flat-lined, requirement of temperature and humidity control, the reality, capacity and collections needs are quite different and nuanced. Those standards simply no longer apply, but there has been only stealthy and uneven adoption of these guidelines. *This* is where the traditions of our profession are not courageous enough to meet the needs of modernity.

We. Simply. Must. Do. Better.

What Next?

Museums must come together, perhaps led by curators and artists, not only on energy for operations but wholeheartedly on our work as a field on behalf of our communities around the world. We must scale-up cooperative action and accelerate the research on our impacts to examine and illustrate our progress.

We have an example of cooperative action in the United States that is slowly spreading. In 2017, when the government announced its intention to withdraw from the Paris Agreement and its goals in support of the United Nations Framework Climate Change Convention, thousands of businesses and financiers, state and local governments, tribes, and higher education banded together to create We Are Still In -- a coalition of non-state actors in support of the Paris Agreement.

Within a year, We Are Still In adopted the Cultural Institutions sector. United States art, history and science museums, zoos, public gardens and aquariums, as well as historic sites and professional associations, are now a vital sector in the largest coalition anywhere in the world of supporters of the Paris Agreement. In the coming years, cultural sector support for the Paris Agreement must announce itself worldwide, then move from *signing on* to the goals of the Agreement to *reporting on* success in achieving these goals. To do this we need a commitment to discovery – a commitment to think, to study, to learn, and to share.

And together we must accelerate our research on the effectiveness of our programs to "forge pathways for engagement" that create hope, and we must come to understand align hope and action with those pathways. The research question is not Does hope lead to action, or action lead to hope? We may never know which comes first, or if it matters. Instead the likely research questions are "Which recipes are most successful for new understanding, hopeful messaging, and opportunities for cooperative action?"

Conclusion

We can figure it out if we approach it with all the curiosity, creativity and courage we have inside us, but we can no longer do only what we were trained for, nor *be* only what we were trained *as*. We must be bigger, bolder, more creative, curious and courageous than that. Our role is to help our communities thrive. We must name what we do in art and humanities settings as examples of our role as allies with scientists. We can use our special resources and talents to encourage creating the art, the stories, the songs, the plays and the movies that world movements use to strengthen themselves. Our museums can create the conditions we need most for the transition from climate despair to climate hope. We can make the invisible visible.□

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5 Leslie Davenport, *Emotional Resiliency in the Era of Climate Change: A Clinician's Guide*, (Jessica Kingsley Publishers 2017), pp. 143-142.

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The MoCA's Pavilion in Venice Biennial 2019 Nada Prlja Subversion to Red

Nada Prlja's 'Subversion to Red' is a project that uses artistic practices and methods to articulate the causes of today's crisis - the precarious, socio-politically and critically produced discourse and its manifestations, the expansion of capitalism and the growth of nationalism and right-wing polices in local and global contexts.

The growth and popularity of extreme right-wing options have confirmed Walter Benjamin's observation that the emergence of fascism is a symptom of failed revolution. The failure of leftist theories and practices to gain recognition as a serious political alternative inevitably paves the way for right-wing options and extremism. On the other hand, capitalist realism and its widespread effects on popular culture, work, education and mental states in contemporary society, implicitly confirms that history is moving in a single direction - towards a world in which capitalism is the only social option, with an authoritarian and bureaucratic mode of politics and a lack of viable strategies for social transformation. The machinations of power in this kind of world provide support solely for those who are already wealthy while ignoring the needs of the oppressed and the marginalized.

Guided by the notion that the past century was characterized by notably left-leaning significant historical events, but also by the declaration of the end of utopian socialism, the intention of the project 'Subversion to Red' is to reconsider the need and possibility for re-actualizing the socialist past through practices from the present and re-evaluating its positive symbolic elements, while all the time remaining conscious of its negative connotations.

The project redefines the idea of communism, understood here as an alternative collective organization and a set of new emancipatory policies to oppose the profit-driven market logic that currently prevails. Loyalty to the idea of a socialist past means little if we do not relate it to the current situation of antagonisms we face today.

Therefore, we raise the following questions. What do we really mean when we say socialist experiments have ended in failure? What is the basis for their proper terminological and practical interpretation today, with the intention of directing them towards a different kind of political emancipation? And finally, in what ways can contemporary leftist alternatives restore ideological support, bearing in mind the historical development of twentieth-century socialist projects?

It is very likely that the range of problems that define the 'interesting times' in which we live will continue and that an effective political response to these problems will not arise. This is one of the reasons for refraining from placing our hopes on the power of the democratic left, and likewise a reason to avoid mythologizing past communism and fantasizing about a 'socialist horizon'.

From this premise, through a series of artistic and non-artistic methods, the author of the project raises questions about the democratic way of solving problems through imperfect but permanent dialogue, through disagreement, disputes, struggles and the resolution of public problems.

The 'Subversion to Red' project shows the potential of art as policy, while also referring to other works of art from the past with similar aims. The process implies an artistic as well as a political imagination, transformed and amalgamated into a 'new work' - a provocative call for unity and coming together in new forms of political action through a specific approach to rhetoric and interaction with the public.

The artist analyses existing historical material relating to socio-political conditions from the 20th century, relating these to the key cultural moments of modern history through several stages of development, applying a research process that takes a documentary approach in the art video *Red-iness: Robespierre, and Red-iness: Gestalt*; using photography through the project *Human Communism; a performance and public debate, Red Discussion1*, which resulted in a video; a performance art event, Red Discussion 2, and the collection of works *entitled She does what She wants*, produced for North Macedonia's pavilion at the 58th International Art Exhibition of La Biennale di Venezia.

Jovanka Popova

Red Discussion II, 2019
Live art event (with Charles Esche, Maurizio Lazzarato, Vlad Morariu, Chantal Mouffe, Laura Raicovich and Artan Sadiku)
6 participants, table, markers, 340 x 340 x 120cm., 2 hours performance.
Courtesy of Nada Prlja Photo © Ana Lazarevska

MAY YOU LIVE IN

REVOLU

DESTRUCTION

renovate | renew
revolutionary thought

NEOFASCISM
(not populism)

ARAB
SPRING

MODE

CAPACITY TO
TO UNDERSTAND
THE SITUATION

WAR

1968

COLONIALISM
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WHOSE
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Red Discussion II, 2019, Installation
Table, markers, 340x340x120cm, 1 TV (video documentation of live art event, 2 hours)
Courtesy of Nada Prlja Photo © Raul Betti

Vlad Morariu

Nada Prlja: the Left, Language and Writing

The room with its dim lights fixed on the tainted, autumnal-yellow, fabric-covered walls of the Palazzo Rota Ivancich is hot and congested. I note the artist's subtlety in maintaining a structural correspondence with the setting of the first *Red Discussion*: both are incomplete and intentionally unfinished. In 2013, visually assertive red paint seized two of Calvert 22's white walls; but painting remained imperfect towards the ceiling, splotches clumsily reaching the upper limit of the cube. In Venice it is much more difficult to work with the space, with its semiotically laden decadence: its crumbling ornaments, stained immemorial mirrors, rotten plaster and cracked floors evoking the Palazzo's former beauty. We learn that the owner had spent her childhood here and we are allowed to mythicise this. But in the early evening these ghosts go into retreat: from the hollow centre of the red table I am looking at the low-wattage light bulbs and clearly discern their yellow filaments projecting on a crowd of human-shaped shadows on the wall.

The audience in this room is hardly disciplined. This is also a transit space to the exhibition spaces on the right where Prlja is showing her *Subtle Subversion* series, escorted by her re-appropriations of Borko Lazeski's paintings and sculptures inspired by, among others, Olga Jevric. From the opposite direction, from the left side, one hears remains of the North Macedonian pavilion's opening speeches. A conversation takes place around the red table. Yet the shifting shape of the public and the fermenting sound of *English*-es, vibrating technological devices and hand-and-leg movements make me think it could have taken place anywhere else: a train station, a public square, a student union, a sit-in.

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Maurizzio Lazzarato is first to speak, in Italian. I am convinced that he is speaking about 'apocalyptic times' to address, at least obliquely, Ralph Rugoff's ambiguous 'interesting times'. I am pleased that I understand enough Italian to be able to scribble down the English translation of *Rivoluzione*: no social revolutions – easily captured in the web of reproductive capital - without political revolutions; *rivoluzione* as necessarily anti-capitalist. I am thinking about the wonderful coincidence that I am Romanian and that I understand Italian quite well – this language that one million Romanian *badanti* [1] and agricultural

Red Discussion II, 2019, Installation
Table, markers, 340x340x120cm, 1 TV (video documentation of live art event, 2 hours)
Courtesy of Nada Prlja Photo © Andrea Avezzù / La Biennale di Venezia

and construction workers now call their own. I am at an advantage, because those seated at the table understand less than myself. They rely on what is scribbled on the red table.

I turn to Chantal Mouffe and I cannot help fixating on her splendid accent, with that distinctive 'R' pronounced from the throat. It is powerful, rounding up a commanding tone that I find decisive and persuasive. It conjures up the memory of the first reading of the book she co-authored with Ernesto Laclau [2] and the strong impression it left upon me. She mentions Michel Foucault in passing and I write down 'All artistic practices are political' (but they can either reinforce hegemonic constructions or disrupt them). I am thinking about the 1980s, post-Marxism, and post-structuralism; however, it is Jacques Derrida that comes to the fore. Not the Derrida of *Specters of Marx*,[3] since I take it as a given that Marx's spectres have already been with all instantiations of *Subversion to Red*, but a Derrida whose deconstruction would read through agonism and hegemonic disarticulation, articulating itself against political and economic institutions, structures, and apparatuses that connect state, cultural power and capital.[4]

With a white marker of different widths I draw lines from Mouffe to Charles Esche and Laura Raicovich. They share an understanding of the semantics of progressive cultural practic-

es, such as those established by Charles and Laura. It is hard to overlook the perlocutionary effect of Charles' sentences, spoken in an English with insular modulations, unspoiled by his command of Dutch that he perfected whilst running van Abbemuseum in Eindhoven, precisely when he insists on Western European de-modernisation, counter-colonial, counter-capitalistic and, significantly, counter-patriarchal. I remember how Hannah Black spoke, in *Red Discussion 1*, about the undoing of capitalism as a practice of undoing gender. In words spoken with transatlantic inflexions, Laura approaches a topic very dear to me – hierarchies of cultural institutions as indexical to the social organisation of Western societies. She argues that we need to reinvent cultural institutions (yes, we do!), through recuperating time and through self-care within communities that nurture an ethics of cultural work shared with the entire world.

Artan Sadiku is very close to my heart: we are both Eastern European and were born only a few months apart; and whilst I remain stranded in Brexitland, he has returned to be socially and politically active in North Macedonia and the ex-Yugoslav space. It is with practice in this context that he speaks about forms of work that escape market-dominated models of capitalist production and reproduction. His points remind me of Dave Beech's and Nina Power's terms from the *Red Discussion 1*: capital, labour, state, violence, alienation and self-criticism. Different contexts, however, different working classes, different forms of violence. With Artan I had a long discussion in the afternoon, prior to the opening of the pavilion, as we were returning from the Arsenale. It concerned writing: we were thinking about the uselessness of the descriptive in writing. For example, the description of times which are, to return to Lazzarato, truly apocalyptic – and we know well that they are so. But is there a writing that survives the apocalypse? What would it look like? I thought of Gail Day and Mark Fisher, both present in *Red Discussion 1*. Gail mused upon the elusiveness of the future - how obsessed we are with the ruins of mythical pasts. Mark Fisher talked about desire, authority and the public sphere; but since his tragic disappearance I am much more inclined to return to his words - Slow Cancellation of the Future[5] - and use them as an interpretative grille for the present. Perhaps, then, Mark could have also thought about a slow cancellation of writing. And yet this is precisely what I am doing here: writing, drawing, tracing.

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I am trying to think through the relations between these different speeches, discourses, languages and writing, as inscribed, at least momentarily, on the red table. It appears to me this is a strand one identifies with clarity in Nada Prlja's work, which approaches writing, linguistic idioms, and language performativity. We may look, for example, at *City Operated* (2006–ongoing) - the series of public interventions in which Prlja transforms the meaning of right-wing graffiti on city walls by changing letters and words. We could think about *Foreign Lan-*

Red Discussion II, 2019, Live art event (with Charles Esche, Maurizio Lazzarato, Vlad Morariu, Chantal Mouffe, Laura Raicovich and Artan Sadiku)
6 participants, table, markers, 340 x 340 x 120cm., 2 hours performance.
Courtesy of Nada Prlja Photo © Ana Lazarevska

guage for Beginners (2010) – the work shown at *Manifesta 8* in Murcia, where Nada investigated the ambiguous interpretation of the letter of the law, as formalised in the language of the *Tercer Grado* system. We find it again in the manner she used the traumatic experience of the *Peace Wall* – which blocked the southern part of Friedrichstrasse during the *8th Berlin Biennale* – to return to the graffiti scribbled on it, in the White Cube Gallery in London in 2013. Yet it seems to me that *Red Discussion* goes a bit further than all these. The project is – to use one of Fisher's favourite terms, itself borrowed from Derrida - hauntological: it affirms, without ambiguity, that it lets itself be haunted by Marx, or at least, as Derrida would say, 'a certain spirit of Marx'.

I think it is important to ponder the significance of this artistic act of affirmation and allegiance, precisely at this historical juncture. Derrida first used this phrase at the beginning of the 1990s at a time when Francis Fukuyama's thesis of the end of history[6] decoded the victorious march of neo-liberalism in Eastern Europe and beyond. Almost three decades after the end of history we are facing the prospect of the extinction of all humankind; and whilst much of the art world has skilfully borrowed, used and abused Marxist vocabularies to describe the crisis at the end and after the end of history, it has not always

been the case that an engagement with the plane of communal action was present. This is where I locate the value of *Red Discussion* as an itinerant and iterative performative: I see it not so much as a work of art that engages with the genre of performance, where a collection of left-wing intellectuals would perform themselves – what would be the point of that? - but as an articulation of speeches that, from a certain Marxian tradition and working with a certain Marxian heritage, *perform* – which is to say, do what they say they do.[7] I believe *Red Discussion* ought to be understood precisely as conjuration of Marx, or Marx's spirit, which, to use Derrida's words again, indicates 'a certain experience of the promise that one can try to liberate from any dogmatics and even from any metaphysico-religious determination, from any messianism.'[8]

The distinction in question here is important: instead of linguistic fashion, politicised language; instead of appropriation of politics, political deconstruction; instead of theory divorced from practice, practice-based theory. Prlja's project does not promise to reveal or discover the essence of a 'new left' but rather a great family of authors, themes, and concepts which, though not always fitting together harmoniously, share a connection to the world of critical action and practice, the world of the performative, the plane of social and political struggles where artistic and curatorial practices must necessarily be included. And I want to explain why this feat is important, by invoking one of Roland Barthes' often-forgotten notes from his work dedicated to myth and ideology.[9]

We may well remember Barthes' famous example: a newspaper image of a young black man in French military uniform, saluting the national flag. The image lends itself to a visual analysis, upon which myth adds itself as an ulterior signified: France as a great Colony who looks after her sons indiscriminately.[10] But it does so through robbery and theft: it puts history and memory at a distance – in this case, the biography of the young black man is almost erased, or at least made accomplice in the signification of French imperiality as unproblematic and self-consistent.[11] Myth is a fraudulent linguistic operation: as meta-language, it depoliticises speech. What enters myth as tension, contradiction and struggle comes out as 'a harmonious display of essences'.[12] It is here that Barthes makes two interesting observations. First, that what opposes myth is political language: language that represents states of affairs by and for a speaker who intends to change them.[13] Second, that myth does not belong to the revolution, precisely because revolutionary language is absorbed in transformative action.[14] Importantly, this is not to say that 'the Left' does not produce myths but that insofar as it does so it stops being revolutionary – or when revolution becomes The Left.[15]

Having participated in both *Red Discussions*, what appears to me with most striking clarity is precisely how history, memory and experience are condensed in these living languages and speeches. Far from perfunctory (even perfunctorily ideological), they are energetic; far from formulaic, they indicate themselves with the practical necessity of a world of action they are drawn from. But they gather their force from the very fact that they re-main momentary and provisional; their authority and resistance to appropriation rests on the fact that they do not occur twice in the same way and the same fashion. *Red Discussion* stays well away from the seduction of mythification; but it does so at the expense of remaining modular and self-deconstructive. How else can one interpret the disembodied segments of the table from *Red Discussion 1* resting on the walls of the Palazzo Rota Ivancich? This writing, these traces, remain fragmentary, inconsistent, unfinished. With its white connecting lines, sometimes continuous, other times fragmentary, the red table does not offer a self-consistent narrative: it does not claim to describe, much less to prescribe anything. Its signs convene on the red table much more like the Venn diagrams of mathematics or contemporary poetry: indeed, if one believes Barthes, these are languages that resist myth, infra-semiological systems of signification whose ideals are not to reach the meaning of words 'but the meaning of things themselves'.[16] This may well be the only way in which writing, after the apocalypse and after the end of history, remains possible.□

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1 *Badante* (It.) is a care worker (usually a woman) for the elderly; in Italy, much of this work is done by often overworked and mistreated Eastern European women.

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8 Derrida, *Specters of Marx*, pp. 111–112.

9 Roland Barthes, *Mythologies* (Paris: Éditions du Seuil, 1957), p. 185.

10 Barthes, p. 189.

11 Barthes, 191.

12 Roland Barthes, *Mythologies*, trans. Jonathan Cape (New York: The Noonday Press, 1972), 142–44.

13 Barthes, 146.

14 Barthes, 147.

15 Barthes, *Mythologies*, 1957, 219–30.

16 Barthes, *Mythologies*, 1972, 133.

Blanca de la Torre

Relocating Red Narratives

No one is surprised, nowadays, to witness that some of the boldest proposals at La Biennale di Venezia are far from the traditional circuits. Such is the case of the pavilion of the Republic of North Macedonia, represented this year by the artist Nada Prlja.

Nada Prlja´s practice is well known for dealing with the complexity of situations of inequality and injustice in society, from current politics to issues of nationalism and immigration. On this occasion she encourages leftist thought and solidarity by seeking to revive the notion of idealism in contemporary society as an alternative form of motivation.

Subversion to Red is an original multidisciplinary project that examines - under an evocative title - how historically forms of art can be used to relocate/'recycle' aspects of the past to current and contemporary forms. The artist speaks about the importance of historical narratives and prompts the exercise of reviewing these by offering multiple possible readings. More specifically, Prlja encourages us to revisit notions of idealism and ideology through a de/reconstruction of the postulates of leftist thought and Marxist theory in order to explore their compatibility with today's society. Researching and examining political, societal and artistic forms of the past, the artist asks whether it is possible to extrapolate them to the legitimacy of their corresponding ideological forms in the present. This discourse takes shape in the exhibition through a body of work consisting of a series of paintings, sculptures, photographs, a video performance and a live art event.

The three sculptures, occupying three of the six exhibition spaces in the Palazzo Rota Ivancich, share the title *The Collection: She does what she wants*. It is not surprising that Prlja uses 'The Collection' in the title for these three works, as the sculptures are inspired by selected works of art from the sixties from the unique collection of the *Museum of Contemporary Art Skopje* (MoCA Skopje). Prlja's choice to highlight this collection and this museum in her exhibition at *La Biennale* is not accidental, as the museum and the collection are founded on the notion of solidarity - the collection itself comprises of 7,600 works of art all donated by different countries and individual artists following the devastating earthquake in the city of Skopje (1963). The notion of solidarity is a key concept of leftist thought and a key aspiration of Prlja's exhibition, *Subversion to Red*.

The relevance of the Museum's collection as a personal reference is likewise significant, as it played a crucial role in Nada

The Collection: She does what she wants, History of Humankind, XX century, 2019
Metal profiles, concrete, 141x150x175cm.
Courtesy of Nada Prlja Photo © Raul Betti

Prlja's adolescence during her frequent visits to the museum while attending the *Fine Art High School* in Skopje, influencing her understand of the unique role of art and the artist's responsibility in a particular social reality. For *Subversion to Red*, after researching the museum's collection, Prlja selected artworks by the artists *Jordan Grabuloski, Olga Jevric* and *Boris Nikoloski*, considering them to represent artists' freedom of expression in opposition to the constraints that commonly defined the cultural context of one-party states. These artists went beyond the

expected in an environment which supported and respected their work, in conditions enabled by the particularities of socialist-era Yugoslavia. With this 'looking back' and revisiting the concept of Solidarity, building on the individuality and resilience of the selected artists who were working in the region in the 1960s, Prlja opposes the world of novelty, invention and temporary trends that has come to be expected within the contemporary art world, looking instead to a possible reshaping of the past for a better future.

Through interweaving conceptual threads from the past and the present, it highlights the ways past and present are being amalgamated, where Prlja's new works and the works from the MoCA Skopje collection become one. What is the particular link between, for example, *The Collection: She does what she wants, Untitled I* (2019) by Prlja, and *Olga Jevric´s* work from the 60s, by which Prlja is inspired (work which has likewise received international attention, with Jevric's participation in the Yugoslav pavilion during the 29th Venice Biennale). For Prlja, an important aspect of Jevric's work is its inclusion of non-artistic "lumps" of material, found objects celebrating the materials characteristic of the construction industry of the 60s. Prlja similarly incorporates fragments of concrete and steel as elements of urban debris, referring to the duality of that urban landscape: modernist on the one hand and chaotic and unregulated on the other. The overarching form of the sculpture is also associated with the shape of one of the key buildings of the post-earthquake reconstruction of Skopje, the expressive structural frame of the housing towers of the City Wall building complex (built according to urban guidelines designed by Kenzo Tange). The global support provided for the immense project of reconstructing Skopje following the devastating earthquake of 1963 led to it becoming known as the City of Solidarity. The sculpture thereby also refers to the fragility of cultural heritage in the city.

In the case of *The Collection: She does what she wants, Untitled II* (2019), Prlja applies the working method used by artist Boris Nikoloski - combining geometric forms that create asymmetric sculptures - to create a series of concrete book forms placed on a metal plinth. On the plinth of another nearby triangular base are piled up fragments of offset prints of Nikoloski´s sculpture *Device 2* (1967), reflecting on the return to realistic sculpture prompted by the artist's loss of belief in modernity during the latter part of his career. With the gesture of cutting the prints, Prlja refers to Nikoloski´s method of reusing some of his previous sculptures as a way of creating new works while reflecting on the artistic conflict represented by this figuralism.

The most personal of the works in the exhibition is probably the group of paintings entitled *Department for Conservation and Restoration* (2015-ongoing), a self initiated action of restoration (repainting) by Prlja of the no longer existing public mural *Epic for Freedom* (1981) by *Borko Lazeski.* The work relates to Prlja's childhood experience of frequent visits to *the* Main Post Office in Skopje, encountering in its main

Red-iness: Robespierre, 2013, Video
Video, single screen, 5 min., loop.
Courtesy of Calvert 22 Foundation and Nada Prlja Photo © Andrea Avezzù / La Biennale di Venezia

hall the mural by Lazevski. Her fascination with the rupture of the monumentality of the building's main hall, accomplished by the murals and the silence of the vast space, can also be observed in the way in which she configures the space of the Venetian *Palazzo Rota Ivancich*, playing with the power of art in changing the perception of the viewer. A certain tone of decadence, characteristic of the 17th century palazzo, contrasts with the artist's works installed within them, enhancing the coherence of the discourse and the content, something which is not easily achieved in this type of "scenario" of working in a site-specific manner within a historic building.

Prlja´s strategy here is one of appropriating Lazeski´s murals to create a series of paintings, changing both the scale and manner of representation of the subject matter, pointing out through their fragmentation the impossibility of an identical/complete restoration of Lazeski's works. As with her other works in this exhibition, she creates a freely interpreted version of Lazevski's mural painting as a way of reflecting upon the fragility of memory and its importance in the reformulation of the past, while questioning how artists can play a part in strengthening the sense of solidarity between the citizens and their city. Considering how the artist can truly 'give back' to the city or society is an intention that goes through all of Prlja's works in *Subversion to Red*.

Is there any real space for novelty in artistic forms and discourses? Perhaps before embarking on an obsessive search for new formula we should first properly understand and review those from the past. In order to do this, one of the factors that the artist uses is time, identifying the gap between the time of realization of the works to which she refers, the 1960s, and the present time in which she reinterprets them, indicating how this temporary distance affects the understanding of the past, so necessary for the restoration operation that she is proposing. Nevertheless, what also needs to be asked is whether there may be any hope for an ideological restoration, too? Can we put forward this question in today's world, which appears to be doomed and approaching an apocalyptic end?

The collaborative character of the whole exhibition and project comes to the fore with the live art event *Red Discussion 2* performed during the opening event of the Pavilion and subsequently documented with a video of the same name. This collaborative or communal aspect of the work is likewise accentuated by the colour red, which imbues the entire project and in particular the theatrical setting of this performative event with a red painted table, the surface of which is covered with phrases noted down during the performative discussion, including 'We need time', 'Contest hegemonic order', 'We need the capacity to understand the situation', 'Revolution' and 'To-be-in-common'… The words and phrases written onto the table by Vlad Morariu are 'offerings' for a better future, established by the participating theoreticians and curators Charles Esche, Maurizio Lazzarato, Chantal Mouffe, Laura Raicovich and Artan Sadiku.

Prlja wonders about the potential activation of critical practices at a time when electoral marketing dominates everything and post-truth seems to have been assumed as a simple electoral resource. The artist 'places on the table' a new, particular discourse which has never been fully surpassed, a discourse that marked a 'before and after' in Europe and in world politics. She does this through a work of art that establishes a comparative counterpoint between the ideological policies of two centuries, the 20th and the 21st, and by inciting a revival of the concept of revolution itself. To accomplish the promises of the old left, these need to be repositioned in a deliberately awkward way, as is intended, for example, with *Red Discussion 2*. Perhaps this is the only way to reclaim these ideals and return them to their proper position, reviewing them from angles that are still pending and still unresolved.

Nada Prlja rebuilds older forms in order to reconstruct collective memory, and with them their narratives. She reframes them in the present, within what we could call the "political present", combining them with a subtle analysis and subversive criticism of capitalism. Somehow she manages to point out the inaction characteristic of the present and of current politics, appealing for a call to action through the Arts.

Then inevitably, questions arise: What are the alternatives? How to position oneself against corporate imperialism and other similar phenomena of present-day reality? Can we still genuinely formulate new forms of social organization or are we simply reinterpreting old ones?

Drawing a critical line between past, present and possible futures, Prlja invites us to re-think these issues at a time when a multifactorial global climate crisis is ever present and at a time when human solidarity and empathy is needed more than ever before. Therefore, after visiting *the North Macedonian Pavilion*, I concluded that the time for the symbolic, metaphorical, fine-art-object is over. I was reassured that there are artists working today who are attempting through their engaged work to respond to the current crises and the most pressing issues of our age in a direct manner and with an appropriate sense of urgency.□
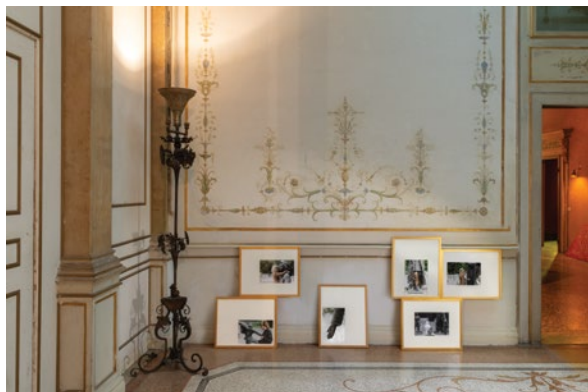
Humane Communism, 2016
Workshop documentation, 20 Photographs.
Held at the National Gallery of Arts, Tirana, Albania. Organised by TAL Tirana Art Lab.
Courtesy of TAL and Nada Prlja Photo © Raul Betti

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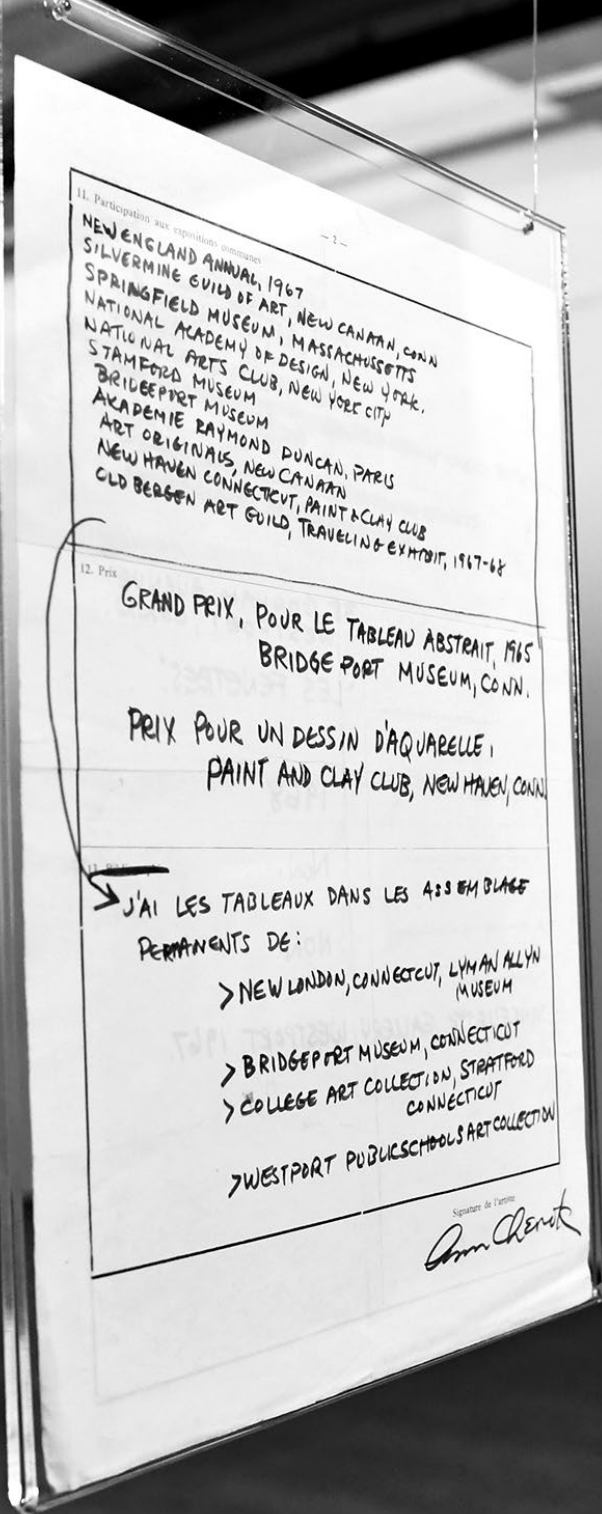Courtesy of TAL and Nada Prlja Photo © Daniel Serafimovski

Skopje Resurgent: Internationalism, Art, and Solidarity, 1963 - 1980

Skopje Resurgent chronicles the genesis of the Museum of Contemporary Art - Skopje collection in the aftermath of a cataclysmic earthquake that leveled the city in July 1963. The crisis triggered a cultural efflorescence that saw international art community help to rebuild the Macedonian capital, a feat of collective good will that has been thus far excluded from canonical narratives of contemporary art history.

In parallel with a global reconstruction campaign organized by the United Nations for Skopje, the International Association of Plastic Arts issued a call in October 1963 for artists to join the solidarity effort. As a result, Skopje is now home to a singular collection of contemporary art, exceptional not least because much of it was gifted by leading protagonists of global contemporary art in the two decades after the city was levelled - a phenomenon that occasioned the creation of the Museum of Contemporary Art in 1964 to display the bequest. Alexander Calder, Minna Citron, Sheila Hicks, Alex Katz, Ion Grigorescu, Sol LeWitt, Wifredo Lam, and many others from across the Cold War divide and the Non-Aligned world donated their artworks to Skopje, while the Polish government commissioned a team of progressive young architects to build a permanent home for the museum that opened in 1970.

Amid an atmosphere of transnational collaboration and optimistic enthusiasm, encapsulated in the 1966 U.N. report titled "Skopje Resurgent," the Museum of Contemporary Art mounted a diverse program of exhibitions. Under the tutelage of founding director Boris Petkovski, followed by Sonja Abadžieva, the Museum organized solo shows of emerging American artists, among them Sarai Sherman, Sheila Hicks, and T.C. Cannon, and surveys of Brazilian, Polish, French, Yugoslav, and Soviet gifts to the collection. A prize awarded by the Museum at the Ljubljana Biennial of Graphic Arts brought several significant new works into the MoCA Skopje collection. Won consecutively by Jasper Johns (1965), Metka Krašovec (1972), Leonhard Lapin (1973) and Tonis Vint (1974), the award reflects a multinodal, globalized art world in which the artists were peers and Skopje was one of many interconnected cultural centers. By fostering such adjacencies, the MoCA Skopje collection testifies to a radically cosmopolitan, multicultural legacy for socialist South Eastern Europe and suggests an alternative cosmology to inherited post-war hierarchies of Western center and post-colonial periphery.

Anna Kats
Kumjana Novakova

11. Participation aux expositions communes — 2 —

NEW ENGLAND ANNUAL, 1967
SILVERMINE GUILD OF ART, NEW CANAAN, CONN
SPRINGFIELD MUSEUM, MASSACHUSSETTS
NATIONAL ACADEMY OF DESIGN, NEW YORK,
NATIONAL ARTS CLUB, NEW YORE CITY
STAMFORD MUSEUM
BRIDGEPORT MUSEUM
AKADEMIE RAYMOND DUNCAN, PARIS
ART ORIGINALS, NEW CANAAN
NEW HAVEN CONNECTICUT, PAINT & CLAY CLUB
OLD BERGEN ART GUILD, TRAVELING EXHIBIT, 1967-68

12. Prix

GRAND PRIX, POUR LE TABLEAU ABSTRAIT, 1965
            BRIDGEPORT MUSEUM, CONN.

PRIX POUR UN DESSIN D'AQUARELLE,
       PAINT AND CLAY CLUB, NEW HAVEN, CONN.

J'AI LES TABLEAUX DANS LES ASSEMBLAGE
PERMANENTS DE:
        > NEW LONDON, CONNECTICUT, LYMAN ALLYN
                                    MUSEUM
        > BRIDGEPORT MUSEUM, CONNECTICUT
        > COLLEGE ART COLLECTION, STRATFORD
                              CONNECTICUT
        > WESTPORT PUBLIC SCHOOLS ART COLLECTION

Signature de l'artiste

Installation View, Skopje Resurgent, Museum of Contemporary Art - Skopje
Photos: Tomislav Georgiev

CONTRIBUTORS

Josephine Berry is an art theorist, writer, editor and lecturer. Her monograph, 'Art and (Bare) Life', (Sternberg Press, 2018), brings the biopolitical theory initiated by Michel Foucault to bear on aesthetic theories of autonomous art in order to consider how the avant-garde 'blurring of art and life' intersects with the modern state's orientation to 'life itself'. This creates a sharp prism through which to interrogate the intense utilisation of art and creativity within late capitalism. This project grew out of an earlier book project, co-authored with Anthony Iles, titled 'No Room to Move: Radical Art and the Regenerate City' (Mute Books, 2010), which considered the use of contemporary art within neoliberal urban regeneration. Josephine lectures on culture industry at Goldsmiths, University of London.

STELARC experiments with alternative anatomical architectures. His performances incorporate Prosthetics, Robotics, VR and Biotechnology. He is presently surgically constructing and augmenting an ear onto his arm. In 1996 he was made an Honorary Professor of Art and Robotics at Carnegie Mellon University, and in 2002 was awarded an Honorary Doctorate of Laws by Monash University. In 2010 he was awarded the Ars Electronica Hybrid Arts Prize. In 2015 he received the Australia Council's Emerging and Experimental Arts Award. In 2016 he was awarded an Honorary Doctorate from the Ionian University, Corfu. His artwork is represented by Scott Livesey Galleries, Melbourne.

Slavco Dimitrov graduated from the Department for General and Comparative Literature at the Faculty of Philology at the University of Ss. Cyril and Methodius in Skopje. He has two master degrees: an MA in Gender Studies and Philosophy (Evro-Balkan Institute) and an MA in Multidisciplinary Gender Studies (Cambridge University). Currently he is a PhD candidate at the Department for Multidisciplinary Studies of Contemporary Arts and Media at Singidunum University in Belgrade. He is one of the founders of the Research Center for Cultures, Politics and Identities (IPAK.Center) in Belgrade. He also works as a teaching assistant at the Department for Political Sciences and Law at FON University, Skopje. His academic and research interests are focused on contemporary political philosophy and aesthetics, corporeality, affect studies, critical theory, queer theory and gender, Yugoslav socialist political history and subcultural practices, cultural studies, performance studies and social choreography.

Nicole C. Karafyllis was trained in biology and philosophy at the universities in Erlangen, Stirling (UK), Tübingen (PhD 1999) and Frankfurt am Main. Since 2010, she obtains the Chair in Philosophy at Technische Universität Braunschweig in Germany. Her areas of competence are philosophy of science, technology and the environment, phenomenology, and history of philosophy. Historically, she is specialized on early 20th century philosophy, including philosophy during fascism, on which she published the book: *Willy Moog (1888-1935): Ein Philosophenleben*, Freiburg, 2nd. ed. 2016. At present, she is principal investigator of two collaborative research projects: MIKROBIB (2018-2021), funded by the German Federal Ministry of Education and Research, which deals with the idea of contamination between naturalism and culturalism for clarifying „cultural goods" in collections; and „Dilemmata of Sustainability" (2019-2022, funded by the Volkswagen Foundation) on the epistemology of environmental research and related policies.

Igor Grubić is an artist whose work includes site-specific interventions in public spaces, photography and film. Since 2000 he has also been working as a producer and author of documentaries, TV reports and socially committed commercials. His interventions in public space, along with his video works, explore past and present political situations while cutting through the fabric of reality, from in-depth exploration of the fate of historical monuments and the demise of industry to examinations of the predicament of minority communities. He represented Croatia at the 58th Venice Biennale in 2019 with a long-term project Traces of Disappearing (In Three Acts) and a short experimental documentary/animation film called How Steel Was Tempered, which has received several awards. Grubić has participated in numerous international exhibitions, amongst which the following should be noted: the Tirana Biennial 2 (2003); Manifesta 4 (Frankfurt, 2002); Manifesta 9 (Genk, 2012); 50 October Salon (Belgrade, 2009); Gender Check, MuMOK (Vienna, 2009); 11 Istanbul Biennial (2009); East Side Stories, Palais de Tokyo (Paris, 2012); Zero Tolerance, MOMA PS1 (New York 2014); Degrees of Freedom, MAMbo (Bologna, 2015); 5th Thessaloniki Biennial (2015); Cut / Rez, MSU (Zagreb, 2018); Heavenly Creatures, MG+MSUM (Ljubljana, 2018).

Jeff Diamanti teaches Literary and Cultural Analysis at the University of Amsterdam. In 2016-17 he was the McGill Postdoctoral Fellow in Media and the Environment where he co-convened the international colloquium on Climate Realism. His work tracks the political and media ecology of fossil fuels, and has appeared in the journals *Radical Philosophy, Postmodern Culture, Mediations, Western American Literature, Krisis, and Reviews in Cultural Theory*, as well as the books *Fueling Culture* (Fordham UP) and *A Companion to Critical and Cultural Studies* (Wiley-Blackwell). Diamanti has edited a number of book and journal collections including *Contemporary Marxist Theory* (Bloomsbury 2014), *Materialism and the Critique of Energy* (MCM' Press 2018), *Energy Culture* (West Virginia University Press 2019) and *Bloomsbury Companion to Marx* (2018), as well as a special issue of *Reviews in Cultural Theory* on "Energy Humanities" and a double issue of *Resilience: A Journal of the Environmental Humanities* on "Climate Realism." He is working on a book called *Terminal Landscapes: Climate, Energy Culture and the Infrastructures of Postindustrial Capital.*

Susanna Hertrich is an interdisciplinary artist working at the intersection of art, technology, and science in Berlin. She combines a range of different media, including devices, sculpture, photography, video, and graphics to stage narrations that often focus on overlooked and uncanny dimensions within technological environments. Her works are exhibited internationally and she has a number of publications to her name. Susanna has been working with various research labs in the past, among them Meta Perception research group at the University of Tokyo, the Design Research Lab at UdK, Berlin and TASML in Beijing. Between 2016–2019, she co-conducted the SNF-funded research project "Sensorium of Animals" at the Critical Media Lab at Academy of Art and Design FHNW in Basel, Switzerland. Since 1999, she frequently visits Japan on various occasions as artist-in-residence, researcher or visiting professor.

Amanda Boetzkes is Professor of Contemporary Art History and Theory at the University of Guelph. Her research focuses on the aesthetics and ethics of art as these intersect with ecology and visual technologies of the late 20th and early 21st centuries. She is the author of *Plastic Capitalism: Contemporary Art and the Drive to Waste* (MIT Press, 2019), *The Ethics of Earth Art* (University of Minnesota Press, 2010), and co-editor of *Heidegger and the Work of Art History* (Ashgate, 2014). She has published in the journals *Postmodern Culture; Art Journal; Art History; e-flux; Weber-The Contemporary West; Reconstruction: Studies in Contemporary Culture*; and *Antennae: The Journal of Nature and Visual Culture*,among others. Recent book chapters appear in *Materialism and the Critique of Energy* (MCM, 2018); *Petrocultures: Oil, Energy, Culture* (McGill-Queen's Press, 2017); *Fueling Culture: 101 Words for Energy and Environment* (Fordham University Press, 2016); *The Edinburgh Companion for Animal Studies* (Edinburgh University Press, 2017); and *Art in the Anthropocene: Encounters Among Politics, Aesthetics, Environments and Epistemologies* (Open Humanities Press, 2015). Her current project, *Ecologicity, Vision and Art for a World to Come*, considers modes of visualizing environments with a special focus on Arctic landscapes.

Gligor Stefanov is an artist with an affinity for natural materials, including straw, jute, cotton, grass, hay, wood and terracotta). Stefanov's early sculptures and installations lay within the context of the geo-ethnographic sensibility of the Macedonian environment. In his subsequent development stage, the Stefanov concentrated on questions associated with space, using it as a material for building unusual linear forms. He has displayed his work at eighteen exhibitions in Skopje, Belgrade, Zagreb, Dublin, London and Venice. He has been awarded numerous prizes, including an award from the Skopje Museum of Contemporary Art. His project for the 45th Venice Biennale was a kind of a liturgical act under the sky as a dome, in the presence of 'Seraphim' and 'Cherubim'.

Chris Salter is an artist, Concordia University Research Chair in New Media, Technology and the Senses, Co-Director of the Hexagram network, Director of the Hexagram Concordia Centre for Research and Creation in Media Art and Technology, Associate Director, Milieux Institute for Arts, Culture and Technology and Professor, Computation Arts in the Department of Design and Computation Arts at Concordia University, Montreal. His immersive and physically experiential works are informed by theater, architecture, visual art, computer music, perceptual psychology, cultural theory and engineering and are developed in collaboration with anthropologists, historians, philosophers, engineers, artists and designers. His work has been seen at major international exhibitions and festivals all over the world such as the Venice Biennale (architecture), Wiener Festwochen (Vienna), Berliner Festspiele/Martin Gropius Bau (Berlin), Musée d'art Contemporain (Montreal), Chronus Art Center (Shanghai), BIAN 2014 (Montreal), CTM Berlin (Berlin), National Art Museum of China (Beijing), Ars Electronica (Linz), Todays Art (The Hague), EXIT Festival (Maison des Arts, Creteil-Paris), among many others. He is the author of Entangled: Technology and the Transformation of Performance (MIT Press, 2010) and Alien Agency: Experimental Encounters with Art in the Making (MIT Press, 2015). He is currently working on a book focused on how we make sense in an age of sensors, algorithms and quantification.

Amanda du Preez is a Professor in the School of the Arts at the University of Pretoria, where she teaches Visual Culture Studies and Digital Culture and Media. She obtained a DPhil in English from the University of South Africa on the topic of cyberfeminism and embodiment in 2003. She has co-edited *South African Visual Culture* (2005), edited *Taking a Hard Look: Gender and Visual Culture* (2009), and authored *Gendered Bodies and New Technologies: Rethinking Embodiment in a Cyber-era* (2009). Her latest edited volume is entitled *Voices from the South: Digital Arts and Humanities* (2018). She served as assistant editor of two accredited journals, *Image & Text* and De Arte. Currently, she serves on the Advisory Board of the international journal *Persona Studies*. She is also a member of the Governing Board of the International Association for Visual Culture and serves as the Digital Humanities Association of Southern Africa's (DHASA) representative on the Conference Coordinating Committee (2019) for the Alliance of Digital Humanities Organizations (ADHO).

Joerg Blumtritt is a creative technologist, researcher and professor for interactive media teaching at NYU Abu Dhabi and NYU New York. He co-founded the companies Datarella and BAYDUINO, based in Munich, Germany, and Baltic Data Science in Gdansk, Poland. BDS delivers data science applications, BAYDUINO makes open source hardware, Datarella builts enterprise blockchain systems. Joerg consults businesses and public institutions in technology driven transformation. As political activist and researcher, he works on projects regarding future of democratic participation and media. Joerg is co-author of the Slow Media Manifesto.

Heather Dewey-Hagborg is a transdisciplinary artist and educator who is interested in art as research and critical practice. Her controversial biopolitical art practice includes the project *Stranger Visions* in which she created portrait sculptures from analyses of genetic material (hair, cigarette butts, chewed up gum) collected in public places. Heather has shown work internationally at events and venues including the World Economic Forum, the Daejeon Biennale, the Guangzhou Triennial, and the Shenzhen Urbanism and Architecture Biennale, the Van Abbemuseum, Transmediale and PS1 MOMA. Her work is held in public collections of the Centre Pompidou, the Victoria and Albert Museum, and the New York Historical Society, among others, and has been widely discussed in the media, from the New York Times and the BBC to Art Forum and Wired. She is also a co-founder and co-curator of *REFRESH*, an inclusive and politically engaged collaborative platform at the intersection of Art, Science, and Technology.

Eduardo Kac is internationally recognized for his telepresence and bio art. A pioneer of telecommunications art in the pre-Web '80s, Eduardo Kac (emerged in the early '90s with his radical works combining telerobotics and living organisms. His visionary integration of robotics, biology and networking explores the fluidity of subject positions in the post-digital world. Kac opened a new direction for contemporary art with his "transgenic art"--first with a groundbreaking piece entitled Genesis (1999), which included an "artist's gene" he invented, and then with "GFP Bunny," his fluorescent rabbit called Alba (2000). Kac's work has been exhibited internationally at venues such as Exit Art and Ronald Feldman Fine Arts, New York; Maison Européenne de la Photographie, Paris; Castello di Rivoli, Turin, Italy; Mori Art Museum, Tokyo; Reina Sofia Museum, Madrid; Zendai Museum of Modern Art, Shanghai; and Seoul Museum of Art, Korea. His work is in the permanent collections of the Tate, London; the Victoria & Albert Museum, London; the Museum of Modern Art in New York; Frac Occitanie—Regional collections of contemporary art, Les Abattoirs—Museum of Modern and Contemporary Art, Toulouse, France; the Museum of Modern Art of Valencia, Spain; the ZKM Museum, Karlsruhe, Germany; Art Center Nabi, Seoul; and the Museum of Contemporary Art of São Paulo, among others.

Saul Newman is Professor of Political Theory. He joined the Department in 2006. His work is in the area of continental political theory as applied to a study of contemporary forms of radical politics. He coined the term 'postanarchism' to describe new post-statist forms of political activism. His research has also led him to an exploration of sovereignty, political theology, democracy and post-secularism, autonomy and freedom, human rights and statelessness. Saul Newman is Co-director of the Research Unit for Contemporary Political Theory. He is the author of 'Political Theology: a Critical Introduction (Polity 2018) 'What is an Insurrection? Destituent Power and Ontological Anarchy in Agamben and Stirner', Political Studies 2016 Postanarchism, Polity, 2015 Agamben and the Politics of Human Rights:

Statelessness, Images, Violence (with John Lechte) Edinburgh University Press, 2013; The Politics of Postanarchism, Edinburgh University Press, 2010; Max Stirner (Critical Explorations in Contemporary Thought series) Palgrave Macmillan, 2011 Unstable Universalities: Poststructuralism and Radical Politics, Manchester University Press 2007;

Chantal Mouffe A political theorist educated at the universities of Louvain, Paris, and Essex, Chantal Mouffe is Professor of Political Theory at the University of Westminster. She has taught at many universities in Europe, North America and Latin America, and has held research positions at Harvard, Cornell, the University of California, the Institute for Advanced Study in Princeton, and the Centre National de la Recherche Scientifique in Paris. Between 1989 and 1995 she was Directrice de Programme at the College International de Philosophie in Paris. As an author, she is globally known for *Hegemony and Socialist Strategy. Towards a radicalization of democracy*, which she co-authored with Ernesto Laclau, and her critical readings of Carl Scmitt.

Sarah Sutton leads Sustainable Museums, a consultancy helping the staff and leadership of cultural and natural resource organizations plan for a more sustainable future. She works with zoos, gardens, museums, aquariums and historic sites to identify and pursue greener approaches in programs, operations, and building and site management. Sutton supports museum field's response to climate change. She is also co-chair of the AASLH Task Force on Environmental Sustainability and part of the American Alliance of Museums' Environment and Climate Network. Sutton is a member of the We Are Still In Executive Committee and the sector lead for cultural institutions. She writes about environmental sustainability in print and online. She is the author of Environmental Sustainability at Historic Sites and Museums, and The Green Nonprofit: The First 52 Weeks of Your Green Journey. She is co-author with Elizabeth Wylie of both editions of The Green Museum: A Primer on Environmental Sustainability (published under the name Sarah S. Brophy).

Vlad Morariu is a researcher, curator and lecturer at Middlesex University London. Vlad's work sits across various disciplines – from 20th century analytic and continental philosophy to sociology, anthropology, fashion and visual and material cultures. His PhD thesis (2014, Loughborough University) explored philosophical frameworks informing the art practices of institutional critique. In 2016 he was AHRC Cultural Engagement Fellow, with a project that revisited Scottish psychiatrist R.D. Laing's reading of phenomenology, and its importance within the practices of the therapeutic communities that Laing co-established in London in the 1960s. Together with Raluca Voinea and Judit Angel, Vlad Morariu initiated Collection Collective, an international network of artists, curators and cultural organizers, who founded in 2017 a collection of contemporary art, collectively owned and managed by its members.

Blanca de la Torre, independent Curator and Art Critic from Spain. De la Torre was Head of Exhibitions at ARTIUM Museum, Spain (2009-2014). She has curated exhibitions worldwide, exemplified by exhibitions at: MoCAB, Museum of Contemporary Art Belgrade, Belgrade, Serbia; Salzburger Kunstverein, Salzburg, Austria; EFA Elisabeth Foundation Project Space, New York, USA; Centro de las Artes Monterrey, Nuevo León; Museo Carrillo Gil, Mexico city, Mexico; MACO Museo de Arte Contemporáneo de Oaxaca, Mexico; NC-Arte, Bogotá, Colombia; RAER, Rome, Italy; LAZNIA Contemporary Art Center, Gdansk, Poland; Alcalá 31 and CentroCentro, both in Madrid, Spain; NGMA, National Gallery of Delhi, Delhi, India and MUSAC Museo de Arte Contemporáneo de Castilla, León, Spain where she is also a member of the museum's advisory board.

Tihomir Topuzovski received his doctoral degree from the University of Birmingham in the UK. He also has two BAs in Philosophy and Art, and an MA in Art, and has received numerous academic achievement awards and research grants. He was a postdoctoral researcher at the Centre for Baltic and East European Studies in the Södertörn University in Stockholm. His research is at the intersection of philosophy, politics and the visual arts. Topuzovski currently works as a research leader in the interdisciplinary programme of the Museum of Contemporary Art in Skopje and is editor-in-chief of the journal The Large Glass. He has published a number of papers and participated in individual and group exhibitions. He is currently writing a book chapter entitled *Political protest, temporary urbanism and the deactivation of urban spaces*, under contract with Springer.

Jovanka Popova is a curator and programme coordinator at the Press to Exit project space and curator at the Museum of Contemporary Art in Skopje. She completed her B.A. and M.A. at the Faculty of Philosophy Institute for History of Art in Skopje. She has curated exhibitions in the contemporary art field in Macedonia and worked on international curatorial projects. She has also presented her work at the Humboldt University, the Central European University in Budapest, the Goethe University in Frankfurt, the Hankuk University of Foreign Studies in Seoul, the Kunst Historisches Institut in Florence, the Bahcesehir University in Istanbul, the Trondheim Academy of Fine Arts and other institutions. She is a president of the Macedonian Section of the AICA International Association of Art Critics.

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