Soils, Séances, Sciences *and* Politics

On the Posthuman and New Materialism

Edited by
Kristiina Koskentola

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INTRODUCTION

Kristiina Koskentola

Keywords: Posthumanism, futurology, Confucian take on technology, New Materialism, Cartesian dualism as fraud, environmentalism, human as one species among others, ecology, sustainability, biology, bodies and technological beings, capitalism, non-human agency, Confucian views on the Posthuman, modernist science fiction, hybrids, metempsyhcosis, pre-history as future, material-discursive labour and speech, non-carnal births (and deaths), processuality, animism, and more.

This volume is collection of essays and practices that reflect on the presentations in the seminar *Soils, Séances, Sciences and Politics (SSSP)- On the Posthuman and New Materialism* (Goethe-Institut, Beijing 2017). This discursive and performative 2-day seminar opened up diverse relevant topics such as, technology, ecology, sustainability, agency, and materiality. An international group of cultural and scientific practitioners -artists, curators, researchers, and theorists- gathered to collectively reflect on these urgent issues with and through diverse art practices. This seminar and volume came to life due to my long-term research and working here in China and my deep interest in the potentials and agencies of non-humans. We joined forces with the Beijing based Institute for Provocation (IFP) -Dai Xiyun, Hu Wei and Song Yi- and together developed this project.

Rather than being an exhaustive introduction to the fields of research in question, this publication consists of individual explorations, positions and reflections. New Materialism and Posthumanism are so far mainly researched in the Western (art) discourse and context. With this publication we focus on opening up a larger transcultural dialogue in the context of visual art and related theory-practises in the fields of New Materialism and Posthumanism. Throughout this diversity of topics the underlining themes and questions are spirituality, environment, dualism, capitalism and temporality. Furthermore, we explore to what extent these theory-practices might be echoing Chinese thought and what might this mean and generate.

On the Posthuman/Postanthropcentric and New Materialism- briefly

Current economic, environmental, geopolitical, and technological developments and the capitalist exploitation of our resources have forced us humans to reconsider our actions and our relationship with our environments and among our co-beings. Rather than maintaining an entitled and arbitrary superiority, we need to rethink of ourselves as an embodied part of the world. With this volume we speculate on new possible futures, future-pasts, and alternative imaginaries. We consider how and why we need to rupture the linear narratives of Western modernism that are still dominating global art discourse and worldviews.

New Materialism and Posthuman/Postanthropocentric theory-practices are emerging across several fields of inquiry, including philosophy, cultural theory, feminism, science studies, and the visual arts. They challenge the superiority of the human by emphasizing the role of nonhuman agents, such as plants, animals, or computers, or of social practices. Posthumanism raises questions about the very structures of our identity as humans and admits our co-beings and the complexities of, for example, contemporary science, politics and international relations. New Materialism takes a critical stance towards dualist views of material/immaterial and reflects on the concept and practice of materialization as a possible starting point for subjectification, embodiment and thinking as the sources for, for example, artistic research. As such they offer alternative perspectives to materiality and knowledge production as practice. Rather than thinking from and within the dominant humancentric systems of power -the very forces we need to rethink- New Materialism and Posthumanism/Postanthropocentricism affirm nomadic and inclusive modes of theory-practices. As transversal cultural theories, they enable fluid connections, travels, and conceptualization of nature and culture, matter and mind, body and soul, thinking and being in active theory formation, and new forms of authorship. They also share an alternative perspective in temporality: they are not solely focusing on the future and particular disciplines. Rather they resonate between old and new, and traverse different domains and fields of knowledge- practices. By doing so they might generate "new metaphysics and tradition" that reflects simultaneously the past, the present and the future (Dolphijn and Tuin 2010). Through the lens of these perspectives history is not something that is written by and solely about the humans but rather includes natural things as well (Bruno Latour 1993).

Hence also the reference to séances in the title of this seminar and publication: we are talking with (not about) the dead such as, for example, with Confucius, Deleuze, and Spinoza.

New Materialism and Posthuman/Postanthropocentric theory-practices thus contest individualism and dualisms, oppose humancentricity and thinking from and within dominant powers. They aim to re-generate our holistic interrelationality.

Dualisms and Unbindings

Human exceptionalism, the idea of human intellect as something superior to that of all her/his other co-beings, has led to the incapability to recognize and to respect their different qualities. Dualisms, such as human- non-human and culture-nature, the 'unbinding' of the human life from nature and the human and from the non-human means positioning the human as the superior, with rational consciousness and transcendence. Due to dualisms our ties to immanent life and our interrelationality have been undone.

Modernism and its sad child the global capitalist machine, driven by ideas/ illusions of progress and profit, has deterritorialised and decoded our world leaving behind a "schizoid and isolated society and immense ecological crises" (Braidotti and Dolphijn, 2018 pp.3). . Capitalism utilises all possible dualisms – exploiting all (human and non-human) 'others'. While hiding the trauma, it withholds from one and gives to another, leaving the 'others' to pay the price of the devastation of physical materiality and natural world.

The mess we humans have created, the period of human dominance and attendant extinction and environmental devastation known as the Anthropocene, is the consequence of the "amputations" of the sensitivities and intellects of our co-beings and environments. We need regain our engagement, take responsibility and humbly acknowledge that we are molecular, we are immanent, we are interdependent, we are intra-acting agencies, we are Interbeings (接現), and not more (or less) than one being amongst other (beings): physically, emotionally, materially and ethically tangled with and embedded in Earth.

With this volume we aim to explore the almost magical heterogeneity and interconnectivity of earthly and cosmic conditions through a contemporary lens and transcultural perspectives. By looking into diverse fields and practices we reflect, for example, how artistic work, entangled with myriad forms knowledge, might generate new thinking about matter and processes of materialization, and generate inclusive relationships among the human and the nonhuman. We explore how these entanglements with other co-beings, entities, and things, in turn, might address pressing ethical, material and political challenges, and global and cosmic interrelationality and kinship.

This volume consists of three parts:

Part 1 consists of essays in which the authors involved review their seminar contributions and contemplate their potentials findings, new questions and new research directions that might have been conceived and opened up through our exchanges. It moves from philosophical journey in New Materialism: through Cartesian dualism as fraud, via Spinoza and Serres to the necessity of getting rid of Humanist presuppositions towards

metempsychosis as a fundamental basic (Rick Dolphijn). We continue with imaginative research on Daoism as the theoretical foundation of Chinese medicine, astronomy, Feng shui and alchemy and as an ancient fundamental approach to the mind-body issue and in relation to technology (Fu Xiaodong). We look into contemporary art practices: the elimination of the great divide between artificial and natural environments, and making a suspended situation of hybridization, new tendencies in bio-art, monism and Eastern entomology (Jo Wei) and research on what roles plants play in modern Chinese politics: If Dao is in weeds and if this might generate new politics (Zheng Bo). We explore capitalism from a more historical materialist perspective: On the relation between Confucianism and technology drawing on the recently published book, *The Question Concerning Technology in China.* An Essay in Cosmotechnics by Chinese/Hong Kongese philosopher Yuk Hui (Mi You) and speculations on, among other, metabolism with nature connected to the historical emergence and transformation of the human in time, how historical constructions of nature can be juxtaposed with the economical and the ecological, in futurology and ideas around 'resilience' (Marina Vishmidt). And finally, moving on from these more humancentric reflections trough historical materialism, we conclude with how theories in physics might be operative in the field of art: New Materialist mapping of the curating and curatorial practices following the framework of Agential Realism by feminist, quantum physicist and philosopher of science Karen Barad (Jussi Koitela).

Part 2 (Bi-lingual) Contains images reflecting the essays by the authors and introduces the practise; video works and performances that were presented during the seminar. As contributing parts to the seminar and this publication, focussing on the particular, individual works, and the specific content and context they explore. We introduce Rumiko Hagiwara's *Full moon* (2014), Hu Wei's *The World of the Hard and the Soft* (2015), Kristiina Koskentola's *Gold Coins to the Headsman* (2015), Tuomas A. Laitinen's *The Powder of Sympathy* (2015), Shian Law's *Transmission* (2017), Liu Chengrui's *Qinghai* (2017), Liu Yujia's *The Third Man* (2014), Sascha Pohle's *Statues Also Die* (2012), Miguel Ángel Rego Robles' *Post-Contingent Coherence* (2016) Song Yi's *On Materiality in Time* (2017), Tian Xiaolei's *The Creation* (2015) and Yang Jian's *Plant Some Weeds* (2015).

Part 3 Is the translation of part 1.

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PART 1
ESSAYS

Chapter 1

WHY WE NEED NEW MATERIALIST THINKING NOW (AS ALWAYS)

Rick Dolphijn

The philosophy of Rene Descartes, which has dominated European thinking since the 17th century, starts from a dualist worldview. His adagio *Cogito ergo sum* ("I think therefore I am", or "I doubt therefore I am ") not only defines the human being as a rational individual being who is solely responsible for this thinking, but also situates the world of thought (*res cogitans*) in opposition to the material world (*res extensa*). The mind thinks, and since the body does not think, it should be considered merely the vehicle for thought. Animals, along with everything else which exists, does not have access to this world of thought (*res cogitans*). The world of thought is there solely for humans (and for God, of course).

With Descartes, the human mind thinks about something: an animal, a thing, or simply the earth. Not fuelled by a God or by any other power outside of the human being, Descartes' "humanist heliocentrism" (it is the human mind that, as 'one', functions as the centre/origin of truth (Descartes 1908, bd.x, p.360))* concludes that matter itself, or nature, which Descartes considers to be 'the same thing', exists outside of thought. Matter or nature, moreover, is a stable system "on the condition that God continues to conserve it the same way he created it" (Descartes 1908, idem, p.105), which he contrasts with thinking, which is always in development (i.e. the singular movement of thinking causes being). Descartes thus created oppositions (and a clear hierarchy) by placing thought and nature in a binary relation to each other. Thought controls matter. The Subject controls the object. Period.

We live in times in which this Cartesian idea, though extremely stubborn and alive in all sorts of discussions, is considered to be a major error in thinking. Its influence has no doubt been immense, as it may have given rise to what we often call Modernism, and it may have given rise to modern technology (in which the machine is alienated from the world and enslaved by man). Today, in the narratives on environmental protection, the Cartesian idea of a stable world, unable to think and controlled by man, still dominates the discussion. Also, the narratives of art have all too often been subjected to the idea that the artist creates art by controlling matter. It really comes down to the same thing, which is the false idea that thinking belongs to us, and that this gives us the power to control the rest of the world.

We live in times in which the earth is striking back. The environmental crisis, of which we have only seen the beginning, requires us to change our behaviour, or much more fundamentally, the starting point of our thinking (ergo, our inherent Cartesianism). It is time to dismantle all of the Cartesian dualisms that are so fundamental to our view of the world. Let us look for new alliances and new forms of kinship (as Donna Haraway (2016) put it), and let us recognise other forms of thinking and other creative practices.

We must realise that we need to go back not to Descartes, but to his humble contemporary, Baruch de Spinoza. His *Ethics*, published by his friends immediately after his death in 1677, holds the key for a philosophy that does not start with the transcendental "I think", but with the materiality of the world, and thus, *immediately* offers us a wholly other perspective on the world. A wholly other world even…

1. Why we need Spinoza as our starting point for thinking (and not Descartes)

To understand how Spinoza initiates his critique of Cartesianism, we should begin by saying that for Spinoza, there is no subject, just as there is no object. More formally, for Spinoza, the external world exists only in how it affects the body, while the body exists only in how it is affected by the external world. Through our predator binocular vision (and the 'edging' through which it sharpens the folds), our poor nose, our stiff neck and our skilful hands, we expand our bodies and give form to our outside; we imagine objects and trust our appetite. We imagine (the same?) snowflake everywhere; we imagine the Other everywhere; we imagine that light is a particle… or a wave… or both, at the same time. Only through the bodily affections can we produce a thought, whereas the body itself can only be known in how it is affected by external bodies (see, for instance, E2P19)*. This means that the idea 'of' the body is consequential to its own situational and relational existence (and the other way around). Thus, Spinoza offers us an absolute relativity, as opposed to the relative relativity of Descartes.

Stressing that only relations can come into existence, one wonders what keeps this life, this 'individual' that is the immanent result of this metamorphosis, in movement. When defining the individual, Spinoza first notes that individual things are finite and have a determinate existence; in other words, they function as one (see 2D7). Yet he adds something to this which is of the greatest importance, which is that any individual necessarily consists of a series of individuals, ad infinitum. Thus, instead of taking the individual as a point of departure (albeit the organic unity (as with Rélay) or even 'a thing'), Spinoza claims that the individual (or more accurately, any possible individuality) is both immanent and creative. It is immanent because there is no 'rule' that tells us what the individual looks like beforehand. This means that for Spinoza, there is no

'organism', no genus or species, and to translate this into post-68 theorems, there is no sex, colour, class, or age from which to start (and thus no sex, colour, class, age, etc. from which to liberate). Consequently, there are also no fixed relationships between particular individuals; what is, in one situation, food for the one is poison for the other, or the other way around (again, it is an absolute relativism).

Spinoza's individual is 'that which is united in one action' or 'that which functions as one' (again see, for instance, E2D7)* and changes its reality (actively and passively) according to the way these relations change (i.e. it is not dependent upon particular 'things'). Building upon this reality of change, Spinoza says the essence of an individual means that this individual will always intend to persevere in its being (in any possible dimensionality). 'Essence' should be read in its classical use, as the (non-existent) present particle of 'esse' (to be, making 'essens'), as proposed by Cicero (according to Seneca). It conceptualises how any individual not only comes to be according to the reality of change, but also, at the same time, it searches for ways to actually live this reality of change. In tune with what we today call the Second Law of Thermodynamics (which is on entropy and promises the deterioration of any system), any individual (a force) is thus forced, for the sake of its own survival, to acquire new modes of existence within the reality of change.

So, what 'is' this individual in Spinozist thought? First, we must keep in mind that for Spinoza, the individual can be anything that functions as one and that aims at persevering in its being. This can be a human being, but also a group of human beings. It can be a cloud, an island, an interface, or an ecosystem. It can also be what we provisionally call the bond between the animal and the plant (the wasp and the orchid), the sympathy between the cloud and the human, or, with a reference to Bateson, the 'system' that comes into being in the event of felling a tree: the system between "tree-eyes-brain-muscles-axe-stroke-tree", the material assemblage that accompanies the felling. For this system also functions as one, and, as Bateson repeatedly emphasises, thinks from its oneness (the set of transformations that function with one another). Contemporary developments in neurophysiology (especially when analysed purely mathematically and not accepting the dominant prejudice of neuroscience that thinking happens only in the brain) similarly push its focus towards the transformation processes.

2. Why our world demands a different form of thinking

Again, this is what Michel Serres shows us best in our day. Having grown up alongside the river beds of the Garonne, he has to see the Garonne not as a river, but as an inevitable companion, a sister, a mother, a friend that is not far away from Vincennes, where he resides these days. The Garonne river is always flowing within him, within his

body, within his thoughts. Inevitably. The Garonne is active in all of his ideas. At the same time, all of his ideas have the Garonne as their object (necessarily). Therefore, he concludes: "When I think, I become what I am thinking" (Serres, 2015, p.21, my translation). The ideas that the system generates rise from its united body, from the oneness established, and have its body as its object. It is for this reason that I call Spinoza, and the Spinozist undercurrent, the revolution that is necessarily materialist. I use materialist here with its double meaning: starting from a non-Cartesian geometry (no point of departure (Subject) and no position relative to it (Object)), and from immanence, translated as an interest in matter and what matters, and not differentiating between the two. Matter (the noun) and to matter (the verb) are, in the end, the same thing.

I want to maintain the radical difference between the two forms of thought in our times (the Cartesian critical perspective and Spinozist materialism), although it must be noted that it is very difficult not to make mistakes in this. What seem Spinozist at first is deeply Cartesian when given a more thorough analysis, and of course, the converse happens just as often. In popular science books today, for instance, a certain form of Spinozism seems to be at work in how biologists look at how plant theory reconceptualises 'thinking'. Scholars like Daniel Chamovitz, a superstar in his field, claims not only that plants are sentient (which we can already read in Darwin), but also that 'plants know' (Chamovitz, 2012, p.137). Not starting from the brain, from 'consciousness' or 'knowledge', Chamovitz seems to start from affect, from how plants respond to the aromas that surround them, from how they respond to being touched and are aware of gravity and of their 'own past'. But in order for Chamovitz's ideas not to fall back into an implicit Cartesian idea of subjectivity here, thinking should not to be situated 'in' the plant, of course. What thinks is the transformation between 'its' colour and 'its' form ('it' is thus not referring back to the plant, of course, but to the whole material assemblage that functions as the object for this idea). And what thinks is also between the sun and its leaves, to give another example. What is more interesting is how anthropologists such as Eduardo Kohn show us how forests think. Analysing how the forests around Ávila (in Amazonian Ecuador) are animate, stressing that these forests house an "emergent loci of meanings" (Kohn, 2013, p.72, italics added), Kohn aptly practices the Spinozist geometry of immanence, combining ancient animist ideas of spirituality with contemporary 'postorganic' neurophysiology. It shows the reality of what Brian Massumi (2014) calls "creative bodying" and its animatedness as "lived" (p.31).

Undercurrents travel in many unexpected directionalities and dimensionalities. When contemporary quantum mechanics (as opposed to 19th century electromechanics) claims that correlations have a physical reality and that to which they correlate does not, as Karen Barad (2007) put it, this resonates with the Spinozism discussed above, as it somehow resonates with contemporary bioart, epigenetics and environmental activ-

ism (to name just a few of the terrains where this is happening). Showing how semio-chemicals and visual signs compose new bodies, create new alliances (a reproductive system that concerns a wasp and an orchid, for instance) is equally connected to this philosophy. And when paleobiologists (for example, Simon Conway Morris) study the convergences between lakes, fishes, stones and weeds, but also wind and temperature, showing how similar eco-spheres, in different geographical locations, give rise to similar organic life forms (which are, interestingly enough, not genetically related), do not they also show us that Dualist thinking, in all of its appearances, is a fraud?

Chamovitz and Kohn, and many other thinkers and artists, both within and outside of academia, are doing fascinating work with respect to questioning the modernism that is so deeply embedded in us. Nevertheless, when it comes to reconceptualising thought and the idea of thinking, Spinoza himself is still the most revolutionary of all thinkers. In his letter to Schaller, dated October 1674 (Letter LXII (LVII)), he claims that a stone too, while in movement, must be able of thinking and knowing. The stone too, is responsive to its environment, undergoes transformations because of it, and does whatever lies in its power to persevere in its being!

The conclusion that freeing ourselves from Cartesian dualism means practicing the idea that "the order and connection of ideas is the same as the order and connection of things" (2p7). We must understand that "words are bodily movements", as contemporary Spinozist Pierre-François Moreau (1994, p.310, my translation) concluded that the life of democracy concerns a material organisation, and that all the dominant ideas in a particular era, while being present, produce new layers upon the earth, new strata upon which a new form of life might develop. All bodies and their ideas always naturally follow from a very 'unforeseen' series of materials that are not so much bound together because of their unity in substance (because we label them 'organic'), but because they 'share a childhood', as I'd like to phrase it; actively or passively, they have been functioning together, they relate, and somehow, it is according to this relation (only!) that they survive. Thus, although we have never been modern, in that its dualisms were based on wrong (Cartesian) ideas about the world, all of these dualisms have been real in their consequences (and continue to be realised). The mass extinctions, the plasticoglomerate (sediments that include large amounts of plastic waste) that promises to be the new top layer of our earth, the large increase in atmospheric CO_2… all of the crises of today show us the perverse reality of Modernism. This is the paradox of our time; we have never been modern, yet we must search for a new way to live in the Ruins of Modernism, as they are everywhere.

Of course, it may very well be that we will not succeed…

3. Why we need to get rid of our Humanist presuppositions

Perhaps Kohn's writings on animated landscapes, combined with the Garonne river in Michel Serres, show us most convincingly how we are immersed in animated landscapes and how animated landscapes are immersed in us, and how this relation causes thoughts and ideas to appear within this immanent individuality that is both inside and outside of us. It shows us how the immanent bodies and their ideas of the contemporary cannot and should not be divided into organic or inorganic, natural or technical, actual or virtual, or indeed, any of the oppositions according to which Cartesianism organises the earth. It shows us the impossibility of any humanism that starts from a 'human' perspective and refuses relations. We have always been necessarily before Humanity; we have never even been human.

Let me phrase this in a proper new materialist fashion: No one was ever human by birth, but shared a childhood with all that was taken up in the surfaces of our life. Refusing to accept 'Man' as its point of departure, Spinozism cannot but conclude that all bodies are necessarily good in themselves and search to increase their particular idea of goodness by creating new alliances, new resonances with bodies that are good to them, that increase their power to act, that aim to exist only from the necessity of their own nature and are determined to action by themselves alone.

Spinozist materialism, especially since '68, started with strong advocacy for humans that did not fit our definition of 'man', thus rethinking the female, the coloured, the aged, and the sexed, but also the sick, the wounded, and the traumatised, after which it turned to the animal, the natural, and the non-organic bodies. But it is important to note that this rethinking, if done well, is done not so much in relation to the dominant forms of power (as said, critical thinking, or Cartesianism, offers us philosophies of liberation). Spinozist materialism has, also since '68, lived as a nomadic and inclusive entity in itself, actualising wholly other landscapes, wholly other forms of life about which we were previously unaware. Braidotti is right: A Spinozist philosophy of the body asks us to always write *beyond the human condition*. This not so much a task, solely, for 'the marginal groups' of society; it concerns all of us. Or better, it concerns all realisations of us/in us/with us.

It is time to understand the unprecedented power of the undercurrent, this burst of creativity that proceeds in philosophy and that materialises in the arts, as well as the joy and freedom it has to offer to all individualities. Let me therefore come back to Serres's claim posed above: "When I think, I become what I am thinking" (Serres, 2015, p.21, my translation). Serres's quotation is the motto of the geophilosopher who has nothing less than the entire earth as its virtual body. With a body that soft, that transformative,

that ghostly perhaps, the geophilosopher has the power to traverse all that matters. The geophilosopher offers us an idea of thinking that perhaps comes closest to a post-Cartesian version of what once was called 'metempsychosis', which it is believed to have been popular mostly among the Pythagoreans in antiquity and that can best be summarised by the following phrase from Empedocles: "I was in other times a boy and a girl, a bush and a bird, a silent fish in the sea…" (quoted in Simondon, 2011, p.22, note 2). Particularly in its modern (19th century) readings, which implicitly accept chronology as the one and only nature of time, metempsychosis is associated with reincarnation.

There is absolutely no reason to ridicule metempsychosis on the basis of its own premises that the human mind equals the human brain, and that Human Thought should be considered "the starting point for knowledge and the paradigm for knowledge" (Gaukroger, 1989, p.50), as I mentioned above (metempsychosis is discussed in the writings of Proust, Melville, Pynchon and Joyce, but often, too critically). Let us rather follow Borges, who saw that the bullet that killed J.F.K. was an old one: "It was the silken cord given to viziers in the East, the rifles and bayonets that cut down the defenders of Alamo, the triangular blade that slit a queen's throat, the wood of the Cross and the dark nails that pierced the flesh of the Redeemer, the poison kept by the Carthaginian chief in an iron ring on his finger, the serene goblet that Socrates drank down one evening" (1998, p.326).

There is nothing human or even organic about metempsychosis. A soul, an idea, a conatus must transform in order to secure its own survival. And in doing so, it is in no way restricted by our humanist taxonomies (why could not the bullet turn into the staircase? (Borges, 1998, p.116)). In an introduction to general psychology by Gilbert Simondon written in 1967 (2011), this revitalisation, this fully transformative definition of the soul, is already suggested, adding to it (and making sure) that after modernity (after Cartesian Humanism, after Critical Thinking), it is the immanent mapping of sameness that marks contemporary metempsychosis, which forces the mind to travel continuously, thus creating new alliances and new ideas. It is time to come to the bitter conclusion that the only truly sustainable idea that Modernity has left us is waste… Travelling chaos, the unterritorialised world, it is through the creative production of matters and ideas that new ways of life come into existence in relation to the new earths that they inhabit. These are different times, perhaps, as always. They are a time to explore, to find out what matters.

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* Editor's notes:

Descartes 1908, bd.x, p.360- Descartes 1908, band.10, p.360

This is how Spinoza Scholars refer to Spinoza:

E2P19 I.e. Ethics 2 Propositions 19

E2D7 I.e. Ethics 2 Definition 7

Chapter 2

KUNCAN, *NEIJING TU*, AND ANALOGY LECTURE ON DAOIST IMAGERY AND PHILOSOPHY OF TECHNICS

Fu Xiaodong

1. Expansion of Cognition

As an anthropologist, Bruno Latour treated and observed the scientific laboratory as a research subject of anthropology, proposing the subject of scientific enquiry—"science" is also a product of social construction. Since science is also culture, we are still situated in the progressive process of cognizing the world. In Ilya Prigogine and Isabelle Stengers' *Order out of Chaos*, the history of how early modern natural sciences developed over three centuries were summarized, with the evolution of science placed alongside a specific cultural background for further observation. They pointed out that dynamics and thermodynamics, physics and biology, natural sciences and social sciences, Western and Chinese cultural traditions should be integrated—establishing a new alliance of the human and the natural on a higher basis, in order to form a new scientific and natural worldview.

As a critical and educational curatorial project, I have organized the project "The 8th Day—Artists in Scientists' Laboratories", sponsored by Space Station and Guokr.com since 2012. Over four years, we have gotten artists to visit different scientific laboratories in over 20 academic disciplines at Peking University, Tsinghua University, and the Chinese Academy of Sciences. By exploring the unknown, ideas that were originally limited to the field of art expand into different knowledge systems, broadening the sphere of cognition and also opening up a sphere with greater potential.

2. Kun Can and *Neijing Tu* (Chart of Interior Passages)

As one of the Four Monk Masters in the late Ming and early Qing period, Kun Can once refused Caodong School's mantle. He was an eminent monk renowned for reaching enlightenment through Buddhist meditations. The most important viewpoint held by the Caodong School is the relationship between "Tathātā" ("thusness") and the world of appearances, and that there exists a relationship of "interdependence" and "independence" between all things on earth. Its most significant practice is to sit in meditation in silence. These practical meditational experiences, along with the School's understand-

ing of the relationship between all things in the world, constitute the foundations for Kun Can's thought. Throughout the Ming and Qing Dynasty, Buddhism and Daoism had a lot in common with each other in terms of self-cultivation. In fact, there was a general tendency towards the fusion of Buddhism, Daoism, and Confucianism, as many Buddhist monks also practiced *neidan* (internal alchemy). Among Kun Can's literary names "Can Daoren", "Renru Daoren", and "Dianzhu Daoren" found in his annotations, we can find his everyday, simultaneous practices of Daoism and Buddhism.

Originating from the *Yellow Court Internal Scenery Scripture*, *Neijing Tu* is the *neidan* image of Daoist energetic mantra. It uses landscape painting to associate our anatomical organs with the Ren and Du meridians, and lays out the internal circulation of Qi (vital energy) through the form of harmonious natural landscapes dotted with manmade pavilions, visualizing the important cavities and critical functions of meditational exercises. *Neijing Tu* represents the essence of the thoughts and techniques of Daoist recuperative exercises, the enigmatic language, riddles, and cryptic messages of which often appear in graphs and textual analyses, expressing the ideas of "cultivating the mind to one's physical health", and "interactions Between Heaven and Mankind" essential to the practice of *neigong* (Daoist spiritual practices involving breathing and meditation). *Neijing Tu*'s illustration corresponds to the Five Phase System: the vital essence of the kidney is analogized to water, as the kidney is considered a water element; the spring willows in the middle represent the liver, which belongs to the category of wood; the heart depicted by the herd boy is guided by fire, whereas the weaver girl is of the metal element and represents the lungs; the spleen, assigned to the earth element, needs balance and stasis. The vital pulses flow against the current along the mountainous roads that symbolize the vertebrate, converging at the top-heavy mountain of nine peaks, or Ni-wan Palace. These movements visualize the cultivation practices of the *lower dantian* (energy center), breathing, and gargling the saliva, as well the phases of "refining essence into breath, refining breath into spirit, and refining the spirit to return it to emptiness". The goal of neidan exercises is to agitate the water and fire elements, eliminate consciousness, ultimately entering the subconscious, activating the *yuanshen* (the original spirit), and cultivating the mind and body. The Chinese alchemist imagines the body to be a furnace, to which the vital essence functions as the medicine and regulates breathing. When it is lit and illuminated, the internal parasites are expelled, dispersing the original spirit to the Ni-wan palace located at the top of the head.

Kun Can's pen and ink skills corroborate his deep understanding of *neigong* cultivation methods. All of his schemas are along the same vein: at the bottom of the painting is a vast sheet of water, as well as a winding mountain road that represents the vertebrate. At the top is a complex, top-heavy mountain with nine peaks, and the stream that flows from the mountain-top represents the salivary fluid issued from the mouth. In Layered

Rocks and Stacked Gullies exhibited at the Imperial Palace, the location of the Three Gates is precisely painted with a pagoda and architecture. A meditating monk sits in a cavern halfway up the mountain. A small waterfall underneath turns into an unconventional S shape that hints at *bagua* (Eight Trigrams). Evidently, the painting is filled with metaphoric symbols of *neigong* meditations pertaining to the path to immortality. *Neigong*'s secretive knowledge system meant that Kun Can's landscape painting was ahead of its time. Like René Magritte, the painting concealed many riddles, making Kun Can a master of obscure, circuitous metaphors.

3. Sacred Topological Landscapes

The idea of landscape painting as an allegory of the body was not invented by Kun Can. In *The Lofty Message of Forest and Streams*, Guo Xi writes: "the rock is the bone of heaven and earth", "the water, the blood of heaven and earth", "water flows as blood of the mountain, the vegetation its hair, and smoke and clouds its spirit." In Guo Xi's painting *Early Spring*, a gigantic, twisted S-shaped mountain stands for the vital pulses. But in terms of its composition, it could be seen as a reproduction of earlier versions of *Neijing Tu*.

Landscape paintings repeatedly depict the same topic: taking a walk from a harmonious scenery complete with grass cottages, through a hidden cave or the precipitous Three Passes, reaching the magnificent palaces with flying eaves up high in the clouds, one embarks on a sacred, hyper-natural journey. The cave acts as a wormhole in the universe that connects different dimensions together. Together with *Neijing Tu*, the cave is also a sacred space of the mind and nature, one that could only be accessed through the trials and tribulations of deep meditation, looking inside oneself, tossing and turning.

Zong Bing's *Preface on Landscape* Painting, the first theoretical treatise on Chinese landscape painting, uses text to describe this kind of topological experience:

 "The Kunlun Mountain is too big, yet the eye is so small. If the mountain is too close to the beholder, its form cannot be seen. If it is several li (several miles) away, its form can be contained in the small eye. It is true that the longer the distance is, the smaller the size of the mountain is."

 "If we use our eyes to capture the essence of the landscape in a painting, and our hearts to understand it, the truth could thus be obtained. If the painting is done with skill and ingenuity, the viewer could see and imagine the same thing as the painter. What the eye perceives and what the heart apprehends are synthesized in the essence of the landscape. The spirit of the painter and the viewer can rise above the mundane, and the

truth will thereby follow."

Since the landscape painting that prevailed in the Northern Song dynasty was large in scale, it usually had to be hung on the main wall in the drawing room. Daoist rituals were still centered around the hill censer, just as miniature rocks in the courtyard once served the function of channeling the spirits. To this day, the porous Taihu stone with holes all over it still appears on desks and gardens. With its topological properties, landscape painting is undoubtedly a sign of the unity of man and nature, an existence that testifies to the belief in divine deities and sacred totems.

Daoism seeks the infinity of time and space: longevity is the infinity of time, whereas the immortal realm is the infinity of space. Such infinitude can only be experienced through meditation, which allows one's consciousness to enter into higher dimensions. As opposed to rising off into the immortal realm, it is more like entering a subconscious state, elevating one's mind from the external, three-dimensional world to higher dimensions, and achieving the infinity of time and space through spiritual wondering. If length, width, and height are axes for measuring three-dimensional space, then we can imagine man's consciousness as the starting point for the fourth coordinate, which, by constantly drifting about and enduring the forces of fate, would be able to extend and transform space. It could be said that man's consciousness is precisely the portal to higher dimensions of time-space that the ancients had labored so hard to find, implying that it is within man's body that the vast infinity of space could be found. *Neijing Tu,* then, is Daoism's esoteric method for cultivating the mind and body, as well as unlocking the space-time portal, to which landscape painting serves as a form of visual metaphor.

4. The Theory of the Five Yang Phases and Analogy

The theological belief of "the heavens and Man are one" places the myriad things and events in the universe into a system of Five Phases and Yin and Yang for categorization and explication. The model of the universe can be understood as stated in the "Xichi" chapter of the *Yijing*. The correspondences in space and movement of Yin and Yang, the Five Phases, and the Eight Trigrams in the Taiji Diagram can be extended to the myriad things, mutually embedded and forming an integral whole. Pan Yuting believed that "Fu Xi's 64 hexagrams correspond to four dimensions—all time and space within the eight cavities". The "Najia method" (of soothsaying) corresponds the phases of the Moon with the twelve double-hours and the Heavenly Stems. This is an integration and unification of space and time, from the inner to the outer, mutually inverted, a topographic universal structural relation continually in movement and in transformation. The Five Phases operate in correspondence with the various inner organs and energies

of the human body, as well as with diverse animals, plants, minerals, double-hours, solar terms, meteorological phenomena and fengshui. This set of numerical symbols, incorporating the Heavenly Stems and the Earthly Branches, the Four Directions and Times, the Five Phases and the Six Lines (of the Hexagrams), the "River Diagram and the Luo Book" where Yin and Yang as well as the Five Phases mutually interact, along with the Declining and Growing Hexagrams (which acknowledge space and time), among others—these cumulatively make up the entirety of the structure of the Three Powers (of Heaven, Earth, and Man) which has been passed on to this day.

The theory of the Five Phases describes the mutual operative relations of different systems, using its inherent qualities to form transformative relations of productive and diminishing cycles. Just as with computer algorithms, how every letter in the memory should be understood depends on the role this letter plays in the program. "Analogy" builds everything into a closely connected perspective. This is then used to interpret the observations of everyday life and the accumulation of knowledge, as well as to construct a vast symbolic system of political governance. The movement of celestial objects in the universe, the random occurrences of nature and meteorology, the order and chaos of politics and states, the social morality and ethics of Man—these, too, are constructed into a correlative interpretative system.

The theorist and scientist of Artificial Intelligence Douglas Hofstadter explores the modes of human thinking through coding that can be thought and programmed. He conjectured that the human brain is an extraordinary piece of software, understanding its own system of though through continual measurements and thereby produce a machine that can think. With works such as *Gödel, Escher, Bach: An Eternal Golden Braid and Fluid Concepts and Creative Analogies*: Computer Models of the Fundamental Mechanisms of Thought, he stated: "I believe that thinking involves discovering the essence of situated-ness; this idea, together with analogy, is closely connected to the core of cognition. Basically, this perspective holds that when we neglect the surface phenomena and find the deep-layer core common to two situations, old and new, and when the new situation is considered as the same as a certain situation (or certain types of situations) from the past, here analogy is created." The deeper layers of connections and abstract connections between symbols become the basic stuff with which the human mind automatically associates in the subconscious. This is not the superficial, direct categorization but the search for similar modes of thought in terms of its natural character, on the deep level.

In order to transcend the vast gulf in intelligence between Man and Machine, the reflections on human intelligence and the science of perception have become an important avenue of research in artificial intelligence. Ideas of embodiment point out that

perception is embodied, originating in the interaction between the body and the world; human intelligence is not limited within the brain but is rooted in the whole organic body and the environment in which the organic body is situated. It is reliant on a base level of nerves and even deeper processes of treatment and structural relations; it is the complex systemic activities and processes that intertwine the brain, the body, and the environment; it is an enormous self-organizing system formed amid the continual stimulation, selection, competition and regrouping. Since the 1980s, the second generation of cognitive science has turned, which involved "embodied cognition", "situated cognition", and "embedded cognition". Embodiment emphasized the interaction of the brain, the body, and the environment; it is an encounter of causes and effects mutually triggered. It holds that humans, the external environment in which humans are situated, as well as other objects in the environment are closely connected, together forming a dynamic, coupled system.

In 2015, the Blue Brain Project announced the first digital copy of the brain. For the first time, researchers studied neurology with algebraic topology, revealing the multi-dimensional geometric structures and universes in the neural network of the brain. Then, following the iconic *Neijing Tu*, aggregating the priomordial spirit in the Ni-wan Palace within the brain in order to gain infinite time and space, then undergoing mathematical transformations with forms such as the eight trigrams and the 64 hexagrams—the two-thousand-year-old technique of training the body and the mind can also be understood as a peculiar attempt of a symbolic system to approach the truth.

Chapter 3

BIOLOGY AND CONTEMPORARY ART IN THE CONTEXT OF THE POSTHUMAN

Jo Wei

As a subject bio-art includes many branches such as ecology, microbiology, molecular biology, biochemistry, bioinformatics and genetics. Biology covers a wide range from micro to macro. In the early 19th century, it was still a mixture of natural history, religion, medicine and mysticism, which could not be regarded as an "enlightened" subject. However, after the paradigm shift in the 1950s, a brand-new structure was established, based on the concept of molecular biology. Since the new millennium, inventions in biotech such as gene editing and the brain atlas have kept on bringing new perspectives on the human and nature, the human and other species, and indeed the human and himself. Will biology inspire the history of thought in the same way that quantum physics did in the last century, and benefit the creation of artists? The article will explore the new possible crossovers between art and biology by analyzing several artworks.

Macro: Ecology, hybrid discourse of the natural and artificial, and Pierre Huyghe

Ecology is a subject that intersects with biology, environmental science and geography, and is thus related to contemporary art through the topics of nature, such as biodiversity, climate change and the environment, etc. In many works, artists consider Nature and Society as two parallel worlds, and separate the points of creating (such as taking samples, videos and photographs) and points of exhibiting. But, as Bruno Latour stated, "Nature and society are not two distinct poles, but one and the same production of successive states of societies-natures, of collectives". [1] The modern system constructs the concept of society, to separate humans from other species. In the context of the posthuman, scholars and artists are starting to reject the dualism of society-nature, and to turn to a more hybrid discourse. The works of Pierre Huyghe in the last twenty years reveal this tendency of thought.

Born in France and based in New York, Pierre Huyghe is a highly productive artist. His previous works span a wide range of themes, from literature, philosophy and perfor-

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1. Latour, B. (1993) *We Have Never Been Modern*, trans. Catherine Porter. Cambridge, MA, Harvard University Press, p. 139.

mance to film. Around 2000, he started to create works on the eco-system that blurred the boundary between the natural and artificial. In his work *6:PM* (2000)[2] , at the same time every day, there is a shadow from a skylight cast onto the floor, as a regular production of sunlight. Yet this is a room without any window, so the shadow is actually calculated, coded and created by a computer. The work is very simple but well implicated, and foreshadows the series of works of the Aquarium project.

The water area is an integrated world in which no humans live, but humans invented the aquarium to duplicate the underwater ecosystem. So what is the human's position in relation to this artificial eco-system? The work *Zoodram* 5 (2011) [3] reflects this paradox by putting an artifact into the aquarium. In the water, among a hermit crab, seaweed and rocks, Huyghe places at the bottom Constantin Brancusi's sculpture *Sleeping Muse*, a modernist style human head in metal. The hermit crab seems not to understand this masterpiece, and treats it as just another shell to live with. The sculpture, standing for the essence of human culture, lies at the bottom of the aquarium, elegant and absurd.

In the work *Nymphéas Transplant* (2014/2016)[4] , Huyghe uses another aquarium to demolish the boundary between culture and nature. In his last years, Claude Monet lived in a garden with water lilies, which is a famous symbol in the history of impressionism. Huyghe transplants these water lilies from Monet's pond to the aquarium and recreates artificially the same intensity and length of sunshine as there would have been when Monet was working in the garden; this enables viewers to experience the climate in which Monet painted these water lilies. But Monet could only see the parts of the water lilies that were above water, while the viewer can now see them whole through the glass. The water lilies here are like a living sculpture in a theatre; from the root in the mud to the stem in the water, and the leaves and flowers above the water, all the parts are revealed to the viewer, in the same way as a real plant. In this scenario, art, history and nature are combined in this plant, just as a meaningful mime.

After ALife Ahead (2017)[5] is presented in the Munster Sculpture Project and is the most splendid work in the ecosystem series, and even expands the ecosystem out of the aquarium. Huyghe chooses an abandoned ice rink, breaks its surface, and exposes the rock and soil below. Sunlight and rainwater enter the space via a skylight, and water forms a pond, around which grow grass and bacteria. This is what the original earth looks like, an ecosystem without humans. Huyghe also introduces artificial elements

2.Huyghe, P. (2014). Munich: Hirmer Verlag GmbH, p. 91.

3. Ibid. p. 174

4.Berhard, J. (ZKM 2016). Monet's Water Lilies in the aquarium

5. Anklam, N. (Sculptur Projecte Archiv 2017) *After Alive Ahead*

by putting the controlling power supply in a small black box in the corner. Inside the box live HeLa cells, an immortal cell strain. They are alive but cannot be considered as lives, which is the perfect metaphor for hybrid discourse. The growth of the HeLa cells influences the opening and closing of the window in the ceiling, and thus controls the sunlight and water of the whole system. In the centre of the site, there is an aquarium on the rock, quite similar to the Parthenon Temple on the Acropolis in Athens. The glass of the aquarium turns randomly from opaque to transparent, totally ignoring the viewers standing around. The viewers walk and climb around the site, but they can influence nothing. They are as if teleported from other locations to view this indifferent world.

Micro: Molecular biology, zoe and gene primacy

Before the concept of the gene was raised, humans observed organisms with the naked eye, understanding the organism at a molar level, and thinking that humans are superior to other species. After the concept of the gene emerged, the understanding of organisms shifted to the molecular level. And after the completion of the Human Genome Project (and other species), we find that humans and other species share the same coding system and many similar gene segments. What is more, the new gene editing technology could transfer animal, plant or even microbe genes into humans, and activate them in the human genes. From this fact, posthuman theory brings forward the term "zoe", "the transversal force that cuts across and reconnects previously segregated species, categories and domains".[6] Zoe is "interactive and open-ended",[7] and is different from "bios", which is exclusively defined for anthropos. The human steps down from the altar, starts to reflect on the relation with other species, and triggers "a zoe-centred egalitarianism".[8]

Donna Haraway declared, "A cyborg is a cybernetic organism, a hybrid of machine and organism",[9] and in her opinion, human enhancement is based on the mechanism. The early works of Stelarc such as *Exoskeleton* (1999)[10] reflect this kind of cyborg imagination. An exoskeleton made of metal extended the function of human limbs. *Rewired* (2015)[11] is an updated version, combining the Internet, remote control and the mechanism. The artist could see with the "eyes" of someone in London, and hear with the "ears" of someone in New York, while an anonymous user from the Internet controlled the movement of his arm. This is a cyborg in the age of the Internet. But after the maturing of the gene editing technique, the cyborg of the future will be one

6. Latour, B. (1993) We Have Never Been Modern, trans. Catherine Porter. Cambridge, MA, Harvard University Press, p. 139.

7.Huyghe, P. (2014). Munich: Hirmer Verlag GmbH, p. 91.

8. Ibid. p. 60

9. 唐娜·哈拉维，《类人猿、赛博格和女人》，陈静和吴义诚译（郑州：河南大学出版社，2012年），第205页.

10. Stelarc (1999)

11. Stelarc (2015)

with gene-modified enhancement. The appearance, longevity, concentration, memory, intelligence and even the sensibility of happiness of humans could be optimized, and marked with difference prices. This kind of human enhancement will initiate a new form of bio-politics and bio-economy, including a growing gap between rich and poor; bio-data as capital; and the gene privacy crisis, etc.

The artwork *Stranger Visions* (2012-2014)[12] foresees this crisis. The artist Heather Dewey-Hagborg collects hair or cigarette butts that have been abandoned in public spaces, extracts DNA from them, and 3D-prints the faces of these strangers she has never seen. The discarded and "useless" biomaterial actually contains the whole set of bio-data of a stranger, from his appearance, possible diseases and personality - all the facts. In this way, the most valuable database of the future will change from digital information to gene information or the brain atlas. When the cost of decoding this open-resource database of carbon-based life reaches a reasonable price, there will be a crisis of gene privacy in public. And that is the prospective side of the work *Stranger Visions.*

Monism and eastern entomology

Entomology is a subject that developed earlier than other branches of biology since humans have long observed and accommodated insects. Different cultures have different attitudes towards insects. For example, when the Mediated Matter Group at MIT Media Lab created the piece *Silk Pavilion*,[13] they carried out research on how a single silk thread can be made into a cocoon, and applied this to the work using a precisely coded structure. Then they made hundreds of silkworms spin their silk on the artificial structure, and thus it became a large work. This mode of thinking is called Reductionism, whereby people take the silkworm as a living 3D printer, emphasizing its function as a production tool.

But the position of the silkworm in Chinese culture is different. There, the silkworm is at the centre of sericulture, people feed it, know the rhythm of its growth, weave fairytales about it, and consider it as a part of daily life. The famous Silk Road also emerged from this creature, which changed the map of world.

Artist Liang Shaoji was born in Jiang Nan(江南),and knows sericulture well. He moved to Tiantai Mountain in 2000, and built the studio there. Tiantai Mountain is considered as the birthplace of Tiantai Sect. Liang created Six Princles in his works, including: "1 The interaction with nature – the integration of nature and human; 2 Sensing

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12.Dewey-Hagborg, H. (2012-2014)

13. http://matter.media.mit.edu/environments/details/silk-pavillion

meditation through life – 'I am a silkworm'; 3 Silkworm (can) – Zen (chan) , Silk (si) – Meditation (si) – Poetry (shi). " [14] He emphasises the interaction with nature, and tries to rebuild the concept of the *unity of man and nature* (天人合一) in his works. He observes the life of the silkworm and records the sound it makes when eating a mulberry leaf, such as in the work Can *Chanchan (Silkworm spinning) (2011)* ,[15] which is also is a record of the artist's inner practice. And Tiantai Mountain, where his studio is based, helps foster the harmonious state of humans, silkworms and nature, too. As the ancient book A Study of Techniques stated, "Provided with the timing determined by the heavens, energy provided by the earth, and the materials of good quality, as well as skillful technique, something good can be brought forth through the synthesis of the four." [16] People take agriculture such as silkworm breeding as the combination of nature and human. This ancient concept of the silkworm in China is consistent with the concept of "monism" in the New Materialism, as "It explores a monist perspective, devoid of the dualisms that have dominated the humanities (and sciences) until today, by giving special attention to matter, which has been so neglected by dualist thought."[17] Thus, ancient Eastern thought might be one of the solutions to rewrite the modernity initiated by Europe.

In conclusion, biology could be merged with art in many aspects, not only for the application of cutting-edge techniques such as gene editing, but also as the living material, image, and even thoughts from both the scientific and cultural side, regardless of the updated Cyborg Theory, New Materialism theory or even ancient Chinese silkworm breeding thoughts. But the thing we should pay attention to is, do not take biology as the symbol of nature, and art as the symbol of society; nature and society are two concepts coined by modernity, and the hybrid of the natural and artificial is the tendency of future. This is also one of the core concepts of Posthumanism.

14.Liang Shaoji, Y. (2015) Shanghai, Shanghart Gallery, 2015, p 174

15.http://www.shanghartgallery.com/galleryarchive/work.htm?workId=15791

16. Hui, Y. (2016). *The question concerning technology in China. An essay in cosmotechnics.* Falmouth: Urbanomics, p. 61

17. Dolfijn, R. and Tuin, I. v/d, 2012. *New Materialism: Interviews & Cartographies.* Imprint University of Michigan Library: Open Humanities Press. P. 85

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Chapter 4

DAO IS IN WEEDS

Zheng Bo

We urgently need to find different ways to live on this planet. We are capable of establishing global trade agreements, building high-speed rail networks, detecting gravitational waves, and editing genomes, but we still do not know how to live equally among humans and other beings. Ever since the "Neolithic Revolution," weeds have been staging a non-stop protest. Who are the revolutionary agents of the future? Perhaps weeds are today's political avant-garde. We had better learn to conceive of revolutions as struggles not only centred on human affairs. We had better learn from other beings how they disrupt power, overturn colonial structures, and prevent lunatics from becoming dictators. We need to build an alliance between vulnerable humans and vulnerable non-humans. We need to expand the idea of the international proletariat to include plants, animals, fungi, microbes, air, water, soil and so on, all of which are exploited by the financial-military elite. In this short essay, I will reflect on a few things I have learned from plants by working with them during the past few years.

I was invited to participate in a large art and architecture exhibition organized by Xuhui District government in Shanghai (2013). The exhibition site used to be a cement factory, which was relocated in 2008 as part of Shanghai's "clean-up" effort for the 2010 World Expo. After the factory was moved, wild plants came and occupied this piece of land. The organizer of the exhibition was planning to get rid of the "weeds" and transform the area into a concrete plaza. However, we convinced the organizer to preserve this habitat as a piece of land art. With the help of landscape designers and plant biologists, we identified over twenty different species in this area, created hand-drawn labels, and opened it to the public as a "found botanical garden." One of the species we discovered at this urban "rewilded" site was wild soybean, *Glycine soja*, which has been declared a vulnerable species due to the lightening rate of urbanization and development in recent decades. Another plant, Canadian golden-rod, *Solidago canadensis,* has a fascinating history. It was brought to Shanghai in the 1930s, when the city was becoming a global metropolis. Originally introduced as a decorative flower, this plant has since become an invasive species, seriously affecting local farming. In addition to this site-specific work, I collaborated with eight experts in different fields to create an open online course (MOOC). Tang Weijie, a literary scholar at Tongji University, found several books published in the twentieth century on the plants of Shanghai. In 1961, at the height of the famine, caused mainly by Mao's Great Leap Forward policy, Shanghai's

government published a book titled *Shanghai Wild Edible Plants*. It was published as an "internal document," to be used by "comrades in discovering grain-substitutes and vegetable-substitutes." I was fascinated by this book. Through the botanical angle, it allowed us to discuss a part of China's history that has been taboo. The book also made the linkage between nature and human politics crystal clear. It prompted me to ask the following question: what roles have plants played in the history of modern China?

Two years later I spent the summer in Shanghai again, looking for traces of weeds in the city and in its historical documents. At the Long Museum, I found weeds in a 1950s watercolour, painted by local artist Li Yongsen. Titled *Carting Grass in Spring*, the picture shows a happy family moving grass on a dirt road. The entire work was painted in the socialist realist style, except for the weeds in the lower left corner. In a collection of Cultural Revolution posters, I found a 1975 poster titled *People's Postman, Party's Propagandist*. It portrays a group of people gathered around a postman reading the party newspaper, *People's Daily*. In the lower right corner of the painting, the artist painted some weeds, possibly *Bidens alba*. In an archive of revolutionary photographs, I found numerous black and white photographs in which communist soldiers used plants as camouflages. All these discoveries suggested to me that plants have always lived in politics. However, we have written them out of our political history. Occasionally they become metaphors for us when we think about politics, or saviours when we have pursued political lunacies. I staged a small exhibition in Shanghai at the end of the summer. I copied the 1961 book on edible weeds, and borrowed the historical documents from various institutions. I also created a weed garden, imagining it as the headquarters of a new political party called the Weed Party. I wrote an application to join the Weed Party. "Why are you joining the Party? Is it because of belief, love, ambition, beauty, or efficiency? I'm not so sure, but increasingly I believe a new -ism will emerge. However, 'new' is not the right word. Wang Xiaoming has previously said that the revolutionary consensus developed in early 20th century China already included a kind of non-anthropocentric understanding of liberation. I haven't yet investigated whether my feelings are similar to the thoughts of that period. I'm only writing down my current feelings.

While engaged in a residency at Villa Vassilieff in Paris in 2016, I revisited the 1920s when Zhou Enlai, Deng Xiaoping, and other Chinese students based in France established the Young Chinese Communist Party. By asking the seemingly illogical question: "What role did plants play in this episode?", I intended to complicate the canonical history of the Chinese Communist Party and international communism, and push for a more historical understanding of the roots of the contemporary ecological crisis. I engaged in conversations with sociologists, political scientists, and botanists in Paris. I also organized a series of three workshops with local artists, designers, and students, imagining a hypothetical "Chinese Communist Garden in Paris." We discussed which

plants the Chinese communist youths might have found fascinating; which plants could have been considered members of the proletariat and which the bourgeoisie; how communists would have approached the idea of "invasive species" in relation to the idea of internationalism. Students at the École du Breuil developed designs for this garden and made maquettes.

The idea of connecting plants with politics is not new. Every October in Beijing, Tian'anmen Square is decorated with plants to celebrate National Day. In 1991, the slogan Socialism is Good (社会主义好) was created with plants in red and yellow. In the summer of 2016, I recreated this botanical propaganda at the entrance to the Cass Sculpture Foundation in Chichester, UK, with *Alternanthera*, also known as joyweed. We left the plants alone after the installation. Two weeks later, weeds started to pop up. They become the main actors and the slogan Socialism is Good became the backdrop. Natural forces intervened in the life of the slogan. A good form of socialism has to consider not just humans.

I was also invited by The Cube Project Space in Taipei to be an artist-in-residence. By chance, I encountered a book published in 1945, in Japanese, by a group of Japanese botanical enthusiasts living in Taiwan. Titled *Taiwan Wild Edible Plants*, it was published in March of 1945, five months before Japan's sur render. It was extremely similar to the Shanghai herbal book published in 1961. It contains drawings and textual descriptions of a hundred edible plants. The preface stated, "At this critical moment of the sacred war, the survival of the empire depends on winning the war on food." All of a sudden, we human beings remembered humble weeds and turned to them for survival. How should we understand this seemingly insignificant dependency?

I noticed that the first six plants listed in the Taiwanese book were all ferns. This was interesting, mainly because Japanese artists who came to Taiwan in the 1920s only paid attention to and painted tropical flowers. When Japan was at the critical moment of losing the war and preparing to retreat into the mountains, all of a sudden they noticed that ferns are the most abundant edible plants in Taiwan. When the Nationalists retreated to Taiwan from the Mainland in 1949, they also did not care about ferns. However, they did bring plants with them. Plum trees were planted widely because Chiang Kai-shek adored plum flowers. Symbols of plum flowers are still printed on Taiwanese currency, and several important Taiwanese social movements have been named after plants: the Wild Lily Student Movement in 1990, the Wild Strawberries Movement in 2008, and the Sunflower Student Movement in 2014. But no movement has been named after a fern. So, I raised twelve species of ferns in my exhibition in Taipei and imagined twelve future social movements named after them, such as the Shoestring Fern Movement for freeganism, the Brake Fern Movement for urban

rewilding, and the Limpleaf Fern Movement, seeking to axe the nation-state.

How can we achieve intimacy and equality with ferns? I invited six young men to walk into a forest outside Taipei to engage in intimate contact with ferns. They made tender love to the plants, sensing each other's smells and textures. Instead of language, they relied on their bodies to build affectionate relations. To have great sex, two partners have to sustain mutual respect and tension, be willing to take risks, and be open to each other's fears and pleasures. Could sex be a means to rethinking our relationship with plants? Only when we are willing to stretch our imagination can we learn to appreciate the complex existence of all living things. Only then will we learn to live more intelligently on this planet.

Through these projects, I have attempted to re-plant plants into both the past and the future. I was delighted to learn that when Zhuangzi (庄子), the 4th Century BC Daoist philosopher, was asked where the way of Dao can be found, he replied that Dao is in weeds (道在稊稗). Perhaps Dao is a better word than politics. It allows us to think more broadly about politics, not limiting it to human communities and nation-states. Instead, we can picture *wanwu*, ten thousand things, in planetary gatherings.

Chapter 5

CONFUCIANISM, TECHNOLOGY AND CAPITALISM:
A FEW THOUGHTS ON THE *QUESTION CONCERNING
TECHNOLOGY IN CHINA. AN ESSAY IN COSMOTECHNICS*

You Mi

My article is centred on the relation between Confucianism and technology. I evaluate the question through historical studies and the lens of historical materialism, drawing on the recently published book, *The Question Concerning Technology in China. An Essay in Cosmotechnics* by Chinese/Hong Kongese philosopher Yuk Hui.[1] Hui's book offers a succinct exposition of the relation between 器Qi, or *techne*, and 道*Dao*, the way, through various historical stages in Confucian philosophy. Hui further expounds on a *techne* that embraces the cosmological dimension, proposing a cosmotechnics to overcome modernity with modernity.

Confucianism and Technology

Historically, Confucianism has not been incompatible with technology. From a Confucian point of view, technological development presents no problem, as long as it pertains to a certain cosmological order. Indeed, one answer to Joseph Needham's question of why China did not develop modern science is precisely that all beings are considered as co-operating in the formation of a cosmic and organic pattern, a view which does not welcome inquiries into mechanical causalities.

Korean scholar Yung Sik Kim tries to re-establish the part of 天工 *tiangong*, heaven's work, in *Tiangong kaiwu* 天工开物, which followed Pan Jixing, was translated by Joseph Needham as "The Exploitation of the Works of Nature" and has been dubbed the 17th century Chinese encyclopaedia of technology. Kim emphasises that while man plays an important role in producing artifice, it is really heaven that lies behind everything in *tiangong kaiwu*, through and through.[2] At the same time, man's role in learning and perfecting the skills, in choosing the amount of raw materials to be processed, in adjusting the production methods according to the need, in short, in keeping with a heaven-man dynamism, is also affirmed.[3]

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1. Hui, Y. (2016). *The question concerning technology in China. An essay in cosmotechnics*. Falmouth: Urbanomics.

2. Yung, S. K. (2014). *Questioning science in East Asian contexts: essays on science, Confucianism, and the comparative history of science*. Leiden: Brill, pp. 63-64.

3. Ibid pp.66-67).

Perhaps more than the 'natural theological' tendency that Kim attributes to Song Yingxing, whereby there is a mindful and moralised heaven, what is at play in the pre-modern Confucian world could be viewed as an organisation and distribution of the material forces involved that honour both the will of heaven and of earth, and always find a balance or an alignment between man and heaven. In other words, the redistribution and balancing acts do not necessarily have to be moralised because they are a manifestation of the way things naturally are. Taoism, as a philosophy and religion, along with various folk religious practices, shares the same materialist world view, in that things are in perpetual transformation and transmogrification, yet without the moralist colouring. In this light, the invention of machines, automation and industrialisation did not necessarily debase the Confucian society. Rather, this did not occur until the introduction of industrial capitalism, which irrevocably rewrote the order of the man-heaven alignment.

In his book, Yuk Hui argues against the Eurocentric and universal understanding of technics, asserting that precisely because of the cosmological and moral dimension imbedded in Confucianism, technics, as such, never existed in China. He then proposes 'cosmotechnics' as 'the unification between the cosmic order and the moral order through technical activities' in order to overcome the conceptual dualism of technics and nature.[4] Cosmotechnics enters into a fruitful dialogue with philosopher Gilbert Simondon and anthropologist Tim Ingold, who attempt to reground the human in the world, thereby reuniting the figure and the ground. Cosmotechnics, in this way, can be seen as a reunification of technics (器 *Qi*, tools) and cosmos (道 *Dao*, the way, order). Hui then makes a plea for the regrounding of technics in cosmology, following Simon-

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4. Hui (2016, pp.19-20).

don and Leroi-Gourhan, who argued that the experience of technics is related to and partially conditioned by cosmology, and that, in the first place, technology is a bifurcation of magic.[5]

Modern China, in Hui's account, has shattered the Qi-Dao unity. Hui traces the various attempts to integrate Qi and Dao by the New Confucian thinkers of the 20th century, most notably Mou Zongsan's idealist proposition, which strove to bridge the 'phenomenon' and the 'noumenon', or what is observable and what is analogous to Dao, and which failed to overcome modernity, because he did not take the question of technology seriously. The Kyoto School's Keiji Nishitani, on the other hand, theorised an absolute nothingness in order to arrive at a different world history. Both attempts are subject to debate. Still, for Hui, it is necessary to "go back to the question of time and to open up a pluralism which allows a new world history to emerge, but one which is subordinated neither to global capitalism and nationalism, nor to an absolute metaphysical ground."[6]

It is exactly on the point of capitalism that I contend more work needs to be done. While appreciating the scholarly rigour that Hui exhibits in tracing the genealogy of technics and cosmology in both East Asian and Western traditions, I try to tackle this proposition of cosmotechnics on a materialist ground, together with concrete sociohistorical circumstances, to understand the implications of the concept and its limits.

While Hui is aware that cosmotechnics is not just a return to a cosmology,[7] in affirming that technics are bifurcated from cosmology (as technics are from science in Simondon), his argument leads to technics needing the same element to which it is born and from which, in some cultures, it has not been separated -- that is, cosmology. Doubtlessly, there are conceptual and social-political merits in re-affirming the cosmological dimension in the belief and practice of the contemporary man. I do not wish to deny the existence of variegated cosmologies in our contemporary society. On the contrary, I acknowledge them all the more precisely because there is a reason for their increasing visibility, that is, the emergence of capitalism. Beyond this capitalistic critique, the question is rather, how does this cosmotechnics interact with other co-existing strata that have admittedly been transformed beyond the reach of the all-encompassing cosmology, and at which scale it can effectuate the most needed change, namely the development of a cosmotechnics appropriate for our time?

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5. Ibid pp.203-223).

6. Ibid p.261).

7. Ibid p.53).

Man-Heaven Alignment Versus Capitalism

In order to unpack the social-political and social-economical differences between traditional and modern China, I will briefly go through the historical-materialism-inspired Deleuzian (trans-)historical stages. The primitive society was one in which desire was in a state of free-flow and by nature created multiple connections. In the despotic society, the invention of automation and machines did not mark the beginning of the exploitation of nature in traditional China, nor did it rewrite the man-heaven alignment, just as the selling of the work force, the exchange of goods and the invention of money did not necessarily give rise to capitalism. Rather, the despotic regime worked by 'disjunctions of inscription',[8] which imposed an order, meaning and a structure on things that are, in their natural state, multi-directional and multi-connective. In so doing, it tamed desire.

It is the decodification of this desire that conditions the development of capitalism. The decoded flows must encounter and form conjunctions: flows of decoded soil sold as private property, flows of decoded money that circulates as capital, flows of workers who are now deterritorialised as mere labour in the service of the work itself or the capitalistic machine.[9] Capital always needs new territories, whether they are new overseas markets or the once solid entities that have been liquidated and decoded like the human body in the service of information technology.

Note that this is a generic description of the movement and organisation of desire, which is itself constituted by the assemblage of bodies and materials in flux. The way these regimes are structured, i.e. the primitive, the despotic and the capitalist, does not follow any teleological or linear developmental view of history, and the 'earlier' orders may very well co-exist or live in symbiotic relation to a 'later' order.

Under this scheme, it is neither inevitable nor necessary that the Chinese (or the Arab or the Indian, for that matter) empire would by itself develop exploitative capitalism. What Chinese history textbooks define as the infant stage of capitalism starting in the southern Song dynasty is nothing but the proliferation of the rate of exchange and organised labour, but nothing to the extent that the decoded flows of wealth (capital), land, and workers (labour replaceable by machines when this is necessary to reduce costs, and who are involved in a market to buy back the things they produce to further social reproduction) all acted among each other to reinforce the autonomy of the flow of desire itself. Ray Huang's study of the Ming dynasty's tax stations on the Grand Canal

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8. Deleuze, G. and Guattari, F. (1983). *Anti-Oedipus*. Minneapolis: University of Minnesota Press, p. 224.

9. Ibid (pp.223-225.

provides good insights about how goods were taxed according to a fixed yearly amount rather than by a percentage. This provides an instance of desire that was tied to a despotic regime of taxation and not to the production of more value. [10]

Hence, the biggest question about why China did not develop capitalism does not depend on, as Max Weber has asked and as new Confucian thinker Du Weiming 杜维明 has passionately defended, whether Confucian society is open to transformation by the world or not. The question is rather whether its own transformative process (being immanent and transcendent at the same time) would ever allow the conjunction of the decoded flows, a desire for desire, within the scheme of the man-heaven alignment. My contention is that it would not. The transition from a precapitalistic despotic machine to a capitalistic machine has cast an irrevocably different condition for the order of the previous kind at large to be maintained, although it does include the symbiotic relations to the other orders at a local level. This analysis makes clear that capitalism is the dominant order in the contemporary society at a systematic level, under whose sway the exercise of cosmological thinking can only happen at the local level.

In modern China, the traditional Confucian alignment was disrupted, and in its place, the most efficient state-guided capitalism has been installed, which follows the conjunctive capitalistic logic and decodes every social strata and entity to transform decoded real or virtual bodies and capital for production. Hui's own understanding of capitalism implicates the mutation of capitalism. He writes, "capitalism is the contemporary cosmotechnics that dominates the planet", and as a 'mode of power', it takes on cosmic dynamics.[11] Ultimately, it leads him to propose the reappropriation of modern technologies and technological consciousness as a way to overcome modernity through modernity itself. This variety of cosmotechnics should "resist the global time-axis that has been constructed by modernity".[12] The conjunctive mode of capitalism, in its ever-intensive decoding and expanding capacity, which double-folds the multi-connective desire from primary societies, may indeed be said to be likened to cosmic dynamics. Yet to unveil the cosmic dynamics, a closer investigation, firmly situated both in the historical materialism and the new materialism(s), is in order. At a national and global scale, Chinese capitalism has the characteristics of both a fully-fledged market economy and strong state intervention, with state-owned enterprises and public-private investments in strategic sectors. The recent tightening of national capital control vis-à-vis the ever-heated transaction volume within the national boundaries further shows the dual-tracked operational logic. The Chinese market breaks while creating new immanence.

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10. Huang, R. (1964). *The Grand Canal during the Ming Dynasty, 1368-1644. PhD.* University of Michigan.

11. Hui (2016, p.299).

12. Ibid (p.306).

This is the ultimate strength of capitalism. Capitalism enlists the movement of desire from the primitive society, and in contemporary China, it conflates capitalism with the despotic state. To draw a diagram, a despotic state can be likened to a set of concentric circles with a defined centre from which the power emanates, be it a religious leader or a king, or a combined figure. The centrifugal momentum of capitalism dislodges bodies, entities, and relations from their once set places in the system in order to expand into new markets and labour, and new debt relations. China operates with both centrifugal motions of capital and centripetal motions of totalisation. At each location, whether in individual persons or communities, there are various forces at play.

To return to the question of cosmotechnics, or the attempt to reinsert technics into a ground beyond the dualistic divide, one must realise the differential scales between the sway of capitalism and the scale on which such a regrounding can happen. Hui is aware of the importance of locality and emphasises how interconnected it is in the global capitalist network.[13] The local should be considered not just in terms of location, but also in terms of the potential seen in the creative advance of matter against stratifications.

Materialism beyond Culturalism

A rigourous engagement with materialism reveals further problems with the naïve cosmology. Hui points out that thinkers such as Bruno Latour and Philippe Descola are drawn to the 'non-modern' to overcome occidental modernity, especially as the age of the Anthropocene weighs down on the human race.[14] Here, extra caution is needed to avoid falling prey to the co-option into a retrograde politics based on culturalist assumptions. Further, one needs to be especially aware of the capitalisation of such discourses in the arts and culture sectors, as conjunctive capitalism incessantly incorporates new virgin lands into its operation of value extraction.

Hui briefly problematises postcolonial theorist Dipesh Chakrabarty's narrative as opposed to concrete political and material questions.[15] Yet he does not expound on the materialism of history, other than how historicism may have material functions (except for a mention of German historicism or the Kyoto School). Vivek Chibber succinctly points out the logical flaws in the academic postcolonial discourse – especially the branch represented by the Subaltern studies – which seems to have become a deeply ideological academic standard. Though the Subaltern studies try to challenge the con-

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13. Ibid (p.307).

14. Ibid (pp.45-46).

15. Ibid (p.305).

cepts and practices of universalism and Eurocentrism by highlighting the experience of the colonised and racialised peoples, they fail to recognise the underlying universalising mechanism of capitalism and the material struggles of the underprivileged class as the true forces shaping the postmodern global world. He emphatically pinpoints Chakrabarty's and Gayatri Spivak's tendency to mystify the Indian workers' cosmological beliefs, because there is no more powerful way to deny the emancipation project of the workers than to say that they do not need to be emancipated.[16] This is a poignant reminder that we should not forget concrete material needs (in a rather classical materialist sense) as we analyse the "new materialisms" or the material-spiritual dimension of matter.

The universalising tendency of capitalism allows it to assimilate differences instead of homogenising them. There is a fine slippage from the good intention of provincialising Europe to the actual project of orientalising and exoticising the non-West. There is no easy solution to culturalism other than to factor in all the socio-political forces at play and analyse them case by case. Ultimately, the task is to affirm the different paths to modernity (if there is a alternative path to capitalism at all) without lapsing into culturalist rhetoric and exceptionalism.

Conclusion

I have analysed the parallelism between the forces determining technological experimentation and the forces shaping the political economy in the despotic and capitalist eras. I have examined Yuk Hui's proposition to reinsert a cosmotechnics dimension into Chinese philosophy in order to offer a materialist ground for future engagement with the latter. It becomes clear that one should not conflate the cosmic dimension and the moral axiological axis, which capitalism incessantly dislodges; rather, one should seek the creative potential at particular localities in order to subvert the total subjugation to capitalism.

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16. Chibber, V. (2013). *Postcolonial theory and the specter of capital.* New York: Verso.

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Chapter 6

POST-HUMAN OR POST-FUTURE, OR, WHAT IS WEIGHING ON THE BRAINS OF THE LIVING

Marina Vishmidt

In relation to the topics of *Soils, Séances, Sciences and Politics*, I would first like to outline a series of speculations concerning ideas of metabolism in nature, and how they connect with the historical emergence and transformation of the human in time. I will then move on to how historical constructions of nature can be juxtaposed in contemporary discourses, particularly those that align the economic with the ecological, such as ideas around 'resilience'. Historical temporality will be shown as something quite distinct from the linear temporalities positing a past, present and future, as well as the static or stuck time of the future as an ever-unfolding continuation of the present; when we end up with successive versions of a fundamentally identical product, like a sequence of iPhone generations or Hollywood sequels. However, before we can talk about the post-human, perhaps we need to determine whether we have actually moved on from the pre-human – if the human is an entity that belongs to historical time and space and not just an outmoded theoretical abstraction.

In his 1859 *Preface to A Contribution to the Critique of Political Economy*, Marx talks about the era's capitalist social formation, the civilization of the global market, which was expanding at the time he was writing, and all the social formations prior to it as a sort of 'pre-history', history being deemed as beginning when humans consciously and collectively plan their social and productive lives and emancipate themselves from the necessities imposed by the dominance of the class society. 'The bourgeois mode of production is the last antagonistic form of the social process of production - antagonistic not in the sense of individual antagonism but of an antagonism that emanates from the individuals' social conditions of existence - but the productive forces developing within bourgeois society create also the material conditions for a solution of this antagonism. The prehistory of human society accordingly closes with this social formation' (Marx 1987). While we may wish to query the historical determinism operating in this idea, though not in all of Marx's work, the notion of history at issue here is one that's worth unpacking. Here, we see history as a goal or a horizon. It's neither a random nor foretold litany of events as sequentially piled more or less arbitrarily on top of each other, but a marker of autonomy – something collectively written by people's actions, not inscribed into a heavenly or a scholarly volume. History is something which is made, not just interpreted. It has to be actively shaped. This 'shaping' principle is in accord with

Marx's *Eleventh Thesis on Feuerbach*: namely, that 'philosophers have up till now only interpreted the world, the point is to change it' (Marx 1998). We know that history has started when humanity has some degree of control over the social condition in which it lives.

This notion of the historical as a collectively planned relationship to the conditions of existence is further characterised by the changing nature of those conditions. The human as an historical agent means self-reflexivity – the human thus being a part of nature, a shaper of nature (as part of its historical agency), and shaped by nature. This sense of reciprocity is one that suspends any of the rigid dualities between human/animal, culture/nature, though the grammar of interaction and reciprocity can also imply a residual duality between these two subjects.[1] Here, we encounter a sense of interaction with nature as constant change, or a dynamic metabolism. This metabolic understanding of the relationship between humanity and nature, the social and the environmental, is where the critique of political economy starts to cross into political ecology, and also starts to anticipate later, quite different epistemologies, such as systems theory and cybernetics, insofar as all of these take account of a certain 'holistic' image of a self-regulating universe.

So, we have to approach terms like 'the human', but also 'the body' and 'matter', as *abstractions*, as simple abstractions that can only be understood in their specific historical and social contexts, as produced for particular reasons and implemented by specific agendas. Such a view of abstraction (that of the 17th century Dutch philosopher Baruch Spinoza, for example) can also evoke histories of thought that often feature in 'new materialist' frameworks, the emphasis being on the indeterminacy of terms that can appear as either naturally or divinely-fixed givens. A well-known example is Spinoza's imperative to realise that 'we don't yet know what a body can do' (Spinoza, 1985). And does it need to be a body at all? In historical materialism, analysis starts with the abstract and arrives at the concrete. This process, however, already modifies the relationship with abstraction, as the analytic process reflects its journey. A simple abstraction, as with the example Marx provides, can be the 'population', or 'the human', as in the above discussion. This connects to the notion of 'real abstraction' or 'social abstraction', which refers to the lived abstractions of capital (money, value, commodity and exchange – but also race, gender and sexuality). A critical approach to these abstractions should be looking for their *operativity*; that is, what they are used for, and what they do.

The inquiry into how such an abstraction is produced – epistemologically, politically, historically – develops until it arrives at a complex (concrete) mapping ,which can in-

1. Later on, Marx would go on to satirically attribute subjecthood to one historical agent, the 'automatic subject' of capitalist value.(Marx, 1990)

clude all kinds of specific data and systematic considerations. These considerations both include and implicate the investigator and her mode of proceeding. Importantly, this inquiry is either open-ended or never-ending, which amounts to the same. Again, we can see that the distinctions between what academia has recently identified as 'new materialism' and the slightly older 'historical materialism' are not so hard and fast. Hence, in line with the analysis suggested by quantum physicist and philosopher Karen Barad, we can think of the 'diffractive', which she sees as a feminist method of reading for 'differences that make a difference' (Barad, 2007). In this light, the human appears in historical time, rather than as a given of philosophical thought. As critical race theory, queer theory, black studies, feminist theory, and other critical theories have long registered, for all its assumed universality, the human category has historically been rather exclusive. Here we can touch briefly on another Marxian concept, that of 'species-being', which basically means the human has no essential nature except for its ability to change and be changed as a *historical* being. Donna Haraway's 'A Cyborg Manifesto' (1991) can be seen to engage a similar notion of species-being – there being nothing natural about any historically contingent human body, and that those who have never been considered quite human – the feminized, the racialized, the queer – have the least to gain from any such naturalizations and normalizations. With reference to a number of the 'new materialist' positions which have emerged in recent years in the Western academy and beyond, the definition of materialism that I am working with is one that focuses on the politics of abstraction, rather than the drive to 'overcome' abstraction. This may run counter to the proposal of one abstraction in order to counter another abstraction – say, utilising the neglected side of a dualism to overcome the privileged site of a dualism – but is more about understanding the non-identity and the materiality of abstractions. So, not abstraction versus the lively materiality of difference as enacted in matter, but rather how abstractions both generate and cancel difference.

Now, I will quickly move through some of the implications of these questions concerning historical time and the human. I mentioned the human as being engaged in a metabolism with nature. The capitalist is seen by many writers concerned with questions of anti-capitalism and ecology as a mode of production that is bound to break down this metabolism (namely, the ecological and social crisis we are living through, and which is currently escalating dramatically on a number of scales). However, it would be more accurate to focus on the industrial mode of production, since it is not only capitalist modernity that has produced such phenomena, even if capitalism was and remains the most powerful driver for the counter-life economies that modernity has established on a planetary scale. The system ecologist Jason W. Moore, however, critiques the idea of the 'metabolic rift' because, rather than seeing nature *in* society, it tends to reproduce the split between nature and society that always seems to sneak into historical materialism. 'Among the Nature/Society dualism's essential features is the tendency to circumscribe

truth-claims by drawing hard-and-fast lines between what is Social and what is Natural. *Here* is a rift: an *epistemic* rift'. He offers a 'metabolic shift' instead. 'In emphasizing *shift* rather than rift, I am suggesting that the most interesting questions – analytical, but also political – turn on the configurations of human and extra-human nature, and in how these are irreducibly socio-ecological and symbolic at the same time. This line of thought yields a co-productive ontology of metabolism' (Moore, 2016). This materialist approach to ecology reflects on Marx's notion that humanity's metabolism with nature is the determiner of social existence as a social ontology, but it also implies a systemic mode of thought. Moore's Marxian ecology deploys a variety of systems thinking, although historically systems theory tended to be a non- or anti-materialist project, most explicitly with cybernetics. Taking both of these as totalising approaches, the distinction from historical materialism lies in the focus on equilibrium and optimisation, rather than a thinking of contradictions and antagonism. Cybernetics focuses on constant self-modulation, adjustment, feedback, though we could say the second-order cybernetics idea of autopoiesis comes closer to ideas of 'species-being' as a process of constant self-making, albeit in the drive to preserve equilibrium.

As already indicated in the note on 'holism', systemic thinking is key to an ecological critique, given that it is concerned with scale, and the relationships that are established within and between scales. Many of these approaches tend to advance a naturalistic understanding of markets as an information ecology which hosts perfect competition between the maximising agents, thus updating of the 'social Darwinism' of Marx's time. Contemporary digital imaginaries are also structured by cybernetic thinking, from the image of the human to images of the economy. These representations suggest that humans and the economy are infinitely engineerable on the micro scale, and absolutely fixed at the macro scale – it being easier to engineer the climate than change the operations of the economy. If the historical materialist criteria for 'history' is the appropriation of human conditions of life through self-determining collectivities, then this would put us still very much in the pre-historic rather than the post-historic epoch. Everything can change, but not the relations of property and power. This underlines the irony of venture capital's passion for the jargon of 'disruption', especially in the tech industry, as well as the emphasis on Artificial Intelligence. What is this if not the fulfilment of capitals' dream of a frictionless accumulation without workers and politics?

This question of property in relation to the envisioning of the future is also at the core of the next futurological discourse I'll be discussing. Here, I would sketch out a broad range of 'right' and 'left post-humanisms' employed in the media and political landscape, at least from the Western perspective of global capital.

The increasingly neo-reactionary and neo-fascist visions of humanity's future espoused

by the 'right' are most influentially articulated in cyberlibertarian positions. These filter vile modernist dogmas such as racism and eugenics through a semi-opaque screen of engineering discourse, with its fetish for 'rationalism'. Cyberlibertarian and Ayn Randian perspectives have captured trans-humanist discourses on the social graph, landing as objectively in the conservative spectrum as Peter Thiel landed in the inner circle of the Trumpian White House. Hyper-capitalism has been confirmed to be hyper-racism, as we can see from the social media grandstanding of someone like libertarian travel writer-cum-philosophy guru Nick Land, with his classic fascist game of provocation and (dis-)identification (Land 2014). These are visions in which the future is defined both as an extension of present trends, such as the quantification and networking of everything, and a nostalgia for bygone times – from colonial modernity to Dungeons and Dragons feudalism – which will provide the service infrastructure for this meritocratic vista.

The 'left' version of this, often found subscribing to similar libertarian and technocratic principles, is often set out in terms of 'resilience'. This is exemplified by the 'global resilience guru' Vinay Gupta, a software engineer and planner who often works for the US government prototyping tent cities for the majority of near-future humanity and is prone to saying things like 'Fixing problems by changing the technology base, and then buying options available to the public, seems to be a fairly painless way to move us forwards, but political change on all of these issues is basically a dead end,' and 'what if the objective isn't to level out the game between winners and losers, but to make life as good as possible for the losers?' (Banks, 2015). Unfortunately, Gupta's greatest disaster relief invention, the Hexayurt, a flatpack collapsible structure that generates less waste material than a geodesic dome, has not yet been widely embraced by the disaster management sector. Thus, over the last few years Gupta has moved away from consulting on disaster relief for US Aid and other global clients and is now works as a high-profile cryptocurrency researcher.

Such examples of what has been called 'cynical reason' (Sloterdijk 2012) point to a consensus on the future as a form of disaster management – the question being how the disaster will be distributed. Resilience here is another byword for getting used to the fact that things will become much worse, and any collective attempt to improve them will make them outright nightmarish, thus making technology our last hope. These speculative futures are better called reactionist futures – the neologism 'reactionist' a nering both the right-leaning political tendency of the movement and the fact that their imaginary is one of fatalistic reactivity to the established parameters, and wing any kind of political imagination beyond the techno-libertarian.

Orit Halpern (2017) writes incisively about the resilience worldview, viewing it as a kind of nihilist humanitarianism. She links the emergence of the resilience ideology and

financialization to the same cultural moment; namely, one in which it is acknowledged that there is no way to prevent extraction and accumulation from functioning as the organising dynamics of planetary life, but that the system can be optimised to withstand the shocks that this dynamic generates on a larger and larger scale. Thus, speculative futures understood in these terms are all about finding ways to make sure the present continues indefinitely. They are also speculative in terms of financialization, as can be seen from the climate trade and its notion of 'ecosystem services'. As Halpern notes, 'Resilience has a peculiar logic […] it is a state of permanent management without ideas of progress, change, or improvement'. Further she observes that 'combined together, resilience and technology create a form of pre-emptive infrastructural governance that naturalises precarity, sacrifice, and violence as a necessary economic value, rather than as a politically derived option.' Coming back to notions of the human, here we can also add that the category needs to be seen not just as an epistemic problem that can be addressed by thinking in terms of the posthuman or the transhuman, but the whole discourse of the Anthropocene problematically centres on the human, even as it supposedly highlights the 'constructed' and fully social nature of our current bio-physical reality. The emphasis on an undifferentiated 'human' influence or destiny and its impact on the natural world links directly to the resilience discourse in the way it simply naturalises the imperatives of capitalist exploitation, accumulation and production to that of the human condition, and something we all need to get used to. So, here, we can see that resilience simply means everyone else continuing to pay the costs of capital's Cheap Nature (Jason Moore (2015) talks about the 4 cheaps: cheap energy, cheap labour, cheap raw materials and cheap food). Human adjustment to the climate crisis amounts to humans continuing to adjust to capital's needs, including its incessant production of massive climate and social crises. This was already discussed extensively throughout the 1970s, the last time global capital in the West seemed to face such a perfect storm of shocks, ultimately ushering in the neoliberal experiment (one which did its best to halt historical time, as in the renowned 'end of history' thesis). The collective Midnight Notes wrote at the conclusion of that decade that, 'for capitalism, any crisis of profitability seems like the literal end of the world and the costs have to be paid by others (humans and not), which we are familiar from the dominant economic principle 'privatisation of profits, socialisation of costs' (Midnight Notes Collective 1980).

Thus ideas around 'posthumanism' and 'new materialism' carry different valences in academic discourse, in which they may seem innovative or simplistic, depending on the perspective, and in social analysis, where they emerge in a complicated accord with many of the most prevalent capitalist futurisms. These tendencies seem to take little account of the most ground-breaking potentials of new materialism's ontological levelling, preferring rather to plug everything into the standard metrics of the commodity – the traditional ontological levelling, one could say, being practically undertaken in

social relations transacted through money. Time is here converted into a resource to be accumulated, extracted from the present to be reproduce in the future. With 'resilience' paradigms, the development of current algorithmic logics and mechanisms of profit and control are seen as playing a positive role in the very phenomena that are being exacerbated thereof. In terms of pre- and post-humanity, a good example would be the 'resilience' of self-quantification in the degradation or absence of socialised health-care, and in fact this is the business model of most platform capitalism – both pushing and taking advantage of the privatisation of not just public resources, but of collective desire. The 'quantified self', perhaps not so incidentally, also recalls the ideological structure of eugenics – the perfection of the individual through technologies (whether racial science, Apple watches or property values), creating a climate in which the engineered deaths of those who have had their means of life deliberately removed from them becomes not only normalised but ethical. We can call it 'silicon valley necropolitics'. It is thus not surprising if this 'future' is viewed as one of brand cycles in a run of (human) capital investment, evoking the immaterial but seductive combination of the global production chains and personalised control that comprise the gadget. The omnipresence of the future as the resilient present can be equated to humanity being cut off from having any role in the future. If fetishism is the condition for being cut off from reality, reality becomes reproductive rather than speculative in the way that various futures come to be seen as possible and tangible. Being cut off from having a role in the future involves nothing more or less than being cut off from having a role in the present.

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Chapter 7

POSTHUMAN PERFORMATIVITY OF THE CURATING-CURATORIAL

Jussi Koitela

This text has two aims. 1. It maps out some recent discourses that differentiate curating from the curatorial. It looks into how this difference is produced and what other discourses can be read alongside of this discursive production in order to understand institutional and theoretical contexts for it. 2. Based on these discourses, the text addresses and emphasises the need for change in curatorial discourses and practices in time that understands urgency of post-anthropocentric thoughts, practices and world-making. It claims that curating and the curatorial needs to move away from socially oriented and human-centric representational and performative models of curating and curatorial into a mode that could be described as "posthuman performativity of the curating-curatorial" This way of understanding curating-curatorial follows the framework of Agential Realism by feminist, quantum physicist and philosopher of science Karen Barad.

Curating and Curatorial

One of the major discussions in the field of contemporary art and its professional labour positions concerning placing art on display and other forms of making artistic practice public has differentiated curating and curatorial from each other. In very general terms this difference can be understood as a difference between the managerial act of representing art in very canonized ways within the context of white cubes and turning the whole act of presentation into an area of intellectual and political experimentation and confrontation. It has been actively defined and reproduced in versatile ways within different texts, publications, research strands and exhibition projects now for couple of decades. Curator Paul O'Neill marks the beginning of the curatorial turn to the late 1980s, when large-scale group exhibitions "became the primary site for curatorial experimentation and, as such, has generated a new discursive space around artistic practice." (O'Neill, 2017, p.14) Since then, curatorial experimentation has spread to all the possible areas of practise in the artistic field and made the difference between the curating and the curatorial meaningful discursive tool within discourses in the artistic field.

One of the influences on this development is what curator and researcher Jonas Ekeberg named New Institutionalism. During the period of New Institutionalism, some of the mid-size art institutions from the mid-'90s to the early 2000s such as Nifca in

Helsinki, Rooseum in Malmö, Palais de Tokyo in Paris, Platform Garanti Contemporary Art Center in Istanbul, Bergen Kunsthal and Kunstverein München started to test out and organize their institutions as sites for civic and activist experiments. Charles Esche, the director of Rooseum in Malmö from 2000 to 2005, perceived his role as a curator as an attempt to turn the art institution into a place where artistic work would create other forms of democratic participation and thus pave the way to a "re-imagination of the world." (Kolb, L. & Flückiger, G, 2013)

One of the reasons for New Institutionalism was that institutions started to appropriate socially and politically engaged strategies and different modes of institutional critique that emerged in the '90s within artistic practices. Many of these strategies were characterized by blending of civic activism and and artistic practises. An artist was no longer an actor that reflects life and politics from a distance but is embodied within the political process and events and takes an active stance within the society. So, working with these artistic practices, institutions should also need to position themselves within the struggles of the civic society, not just represent certain artistic practices.

Another discussion that goes along paths of New Institutionalism and the Curatorial Turn is discussion of post-representational curating. It emphasizes curatorial strategies that go beyond representing rigid forms of artwork, oppressive identities and hegemonic ideological positions within the curatorial practises and artistic institutions and by doing so challenge the problematics of representational democracy. Discourse on post-reprentationality of curating puts emphasis on emancipatory and process-oriented potentials of curating. Educator and curator Nora Sternfeld states: "It could however raise the question of how a process-based, post-representational curatorial praxis – in so far that it is understood as taking public and intellectual action – could and should articulate its place as being in solidarity with existing social struggles." (Sternfeld 2013)

I will now look more closely into two positions that have been differentiating curating from the curatorial and have close relation to New Institutionalism and non-representational curating. For curator and current director of Tensta Konsthall Maria Lind, performing the curatorial is an endeavour that begins from the artwork but goes away from it and even against it. She states: "I imagine curating as a way of thinking in terms of interconnections: linking objects, images, processes, people, locations, histories, and discourses in physical space like an active catalyst, generating twists, turns and tensions…" (Lind, 2010, p. 63) What is acknowledgeable in this claim is that at the same time it presents performing the curatorial as something more dynamic and active than curating practise as representing art and at the same time it reproduces the idea that there are pre-given "things" and "areas" of the world such as artworks, objects, processes, people and locations within the process of making art public.

Another recent formulation of the curating-curatorial difference is presented by Jean-Paul Martinon and Irit Rogoff on *The Curatorial – A philosophy of Curating*. In the preface, they differentiate curating and the curatorial by relating curating to professional activities such as setting up exhibitions and other modes of presentation, and the curatorial to intended and unintended ways of disturbing this process: "Curatorial disturbs and breaks down the stage" (Jean-Paul Martinon and Irit Rogoff, 2013, ix) that curating has build up. What becomes important for understanding this is how intended and unintended ways are defined and how intention relates to the agency of the curator.

From Social to Agential Realism

What is common to both of these positions on curating and curatorial is that they do not challenge the elemental divisions of nature and culture and nature and society within Western and Cartesian thought. In both of them there is potential towards it but they are at the same time strongly rooted in these dualisms. This is problematic because it seems that challenging these dualisms seems to be one of the only productive and emancipatory possibilities in the morass of entangled global economical, ecological and political crises. Environmental historian and political economist Jason W. Moore argues "that 'Society' and 'Nature' are part of the problem, intellectually and politically; the binary Nature/Society is directly implicated in the colossal violence, inequality, and oppression of the modern world, and that the view of Nature as external is a fundamental condition of capital accumulation." (Moore, 2015, p. 2). The world and its ontological, epistemological and ethical urgencies are meshed realities without clear distinctions and areas. So curating, curatorial and making art public need to rethink and adapt themselves in the face of these earthly intra-actions and start their operations from a different perspective.

One of these starting points could be Agential Realism, the perspective of feminist, quantum physicist and philosopher of science Karen Barad. Agential Realism is group of thoughts building ethico-onto-epistemological entanglement that challenges many of the dualisms at the core of Western though such as subject and object, material and discursive and human and non-human. I will present here two central ideas from her thinking to demonstrate problematic aspects of Maria Lind's, Irit Rogoff's and Jean-Paul Martinon's positions on curating and the curatorial.

For Barad, critique of representationalism starts from acknowledging that "representationalism is the belief in the ontological distinction between representations and that which they purport to represent; in particular, that which is represented is held to be independent of all practices of representing. That is, there are assumed to be two distinct and independent kinds of entities—representations and entities to be represented" (Barad, 2006, p. 804). In

the anthropocentric Western tradition, subject is considered to be a human and object a non-human entity and these are regarded independent of each other.

For her, posthuman performativity is intra-activity that is not a process in which the human subject represent non-human object but "...there is a host of material-discursive forces— including ones that get labeled 'social, 'cultural,' 'psychic,' 'economic,' 'natural,' 'physical,' 'biological,' 'geopolitical,' and 'geological' that may be important to particular (entangled) processes of materialization (Barad, 2006, p. 810). She addresses dangers of following disciplinary habits that are only tracing disciplinary causes through to the corresponding disciplinary-defined effects, will miss all the crucial intra-actions.

> What is needed is a robust account of the materialization of all bodies—" human" and "nonhuman"—and the material-discursive practices by which their differential constitutions are marked. This will require an understanding of the nature of the relationship between discursive practices and material phenomena, an accounting of "nonhuman" as well as "human" forms of agency, and an understanding of the precise causal nature of productive practices that takes account of the fullness of matter's implication in its ongoing historicity. (Barad, 2006, p. 810)

Intra-action is one of the key concept of Barad's Agential Realism framework. By Intra-action she means that there is a pre-existing relation before "things" emerge such as subject and object. So this relation which Barad discusses as phenomena are basic "units" that constitute reality. Intra-actions are processes where the differential boundaries between "humans" and "nonhumans," "culture" and "nature," the "social" and the "scientific" are constituted […] The world is intra-activity in its differential mattering. It is through specific intra-actions that a differential sense of being is enacted in the ongoing ebb and flow of agency (Barad, 2006, p. 817).

So by using Barad's understanding of posthuman performativity and intra-actions, specific questions can be addressed to Lind, Rogoff and Martinon. To begin, we can ask, is it possible to begin from art work, as Lind states, if we are not following disciplinary habits? So can we begin from "art work" understood as a specific "disciplinary" or an area in reality? Can art works be though as pre-given independent "things" where we can move beyond and against them, before the act of making it public? Or are art works and the world cut away from it, part of "This ongoing flow of agency through which 'part' of the world makes itself differentially intelligible to another 'part' of the world and through which local causal structures, boundaries, and properties are stabilized and destabilized does not take place in space and time but in the making of spacetime itself as Barad describes how the difference and the agency relate to each other?

If they are, then we should ask is it possible for curators or those performing the curatorial to be independent of the agential subject that links "objects, images, processes, people, locations, histories, and discourses in physical space like an active catalyst"? Or should we experience and materialize the curator and curatorial as something that is part of agential flow where structures and boundaries of curators, art works, objects, people and locations... are in a constant stage of intra-active emerging?

Finally, we need to ask what is the dualism of intentional and unintentional ways of disturbing the stage that curating has build up meaning in relation to curatorial agency? Is intentionality only possible if the curator is regarded as an individual human subject? Does intentionality exist if the human-nonhuman cut is done differently than the Cartesian cut? Can curatorial agency exist if agency is constant intra-active performativity?

Posthuman Performativity of the Curating-Curatorial as Moulding Alternative Forms of Life

So from these reflections on dualist and disciplinary claims about curating and the curatorial, I would claim there needs to be a new approach to making art public that acknowledges these doubts and challenges to curating and the curatorial as an ethico-onto-epistemological entanglement. This approach should 1. carry with it a state of constant intra-active becoming of ethico-onto-epistemological differences in artwork, curators, institutions, audiences, spaces, contexts, politics, natures, cultures, humans, non-humans, life, non-life... 2. It should form curating-curatorial practices where intentionality can flourish as distributed posthuman agentiality.

Based on these two aims, and in order to form a practice of making art public for post-anthropocentric Earth, curating and the curatorial should be understood as an intra-active curating-curatorial practice. This practice is making new justice and moulding alternative forms of life in the sense of researcher Dimitris Papadopoulos' notion of 'insurgent posthumanism'. He claims that insurgent posthumanism is driven by justice as a material, processual and practical issue before its regulation though political representation: "justice engrained into cells, muscles, limbs, space, things, plants and animals. Justice is before the event of contemporary left politics; it is about moulding alternative forms of life"(Papadopoulos 2010).

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GLOSSARY

Please note that this glossary is a small part of the vocabulary that is still developing within the discourses of Posthumanism and New Materialism.

Animism –

An anthropological construct used to define worldviews in which non-human entities possess spiritual essence.

Animism –

In Anselm Franke's (2010) research, animism is situated to re-vision modernity; Animism not as a matter of belief but a boundary-making practice.

Anthropocene –

The current geological age. The period during which human activity has been the dominant influence on climate and the environment.

Becoming –

Gilles Deleuze and Felix Guattari's concept of an ahistorical path towards something new and unfamiliar. A generative way of being that consists of fluid confluences rather than resemblances (Claire Colebrook, *The Deleuze Dictionary* 2013).

Capitalocene –

The 'Age of Capital' is precisely not the geological era, but the conditions shaped by human capitalist organisation.

Confucius –

(551 BC – 479 BC) A Chinese teacher, editor, politician and philosopher.

Confucianism –

A moral, ethical and metaphysical Chinese philosophy.

Culturalism –

"Organization of the world that, with its constructs and extreme limits more and more alienates the world from nature "(Braidotti 2018 p.3). The idea that individuals are determined by their culture, that these cultures form closed, organic wholes, and that the individual is unable to leave his or her own culture but rather can only realise him or herself within it.

Neo-Confucianism –

Originated by Han Yu and Li Ao (772-841) during the Tang Dynasty, and later becoming prominent during the Song and Ming dynasty, Neo-Confucianism is a more rationalist and secular form of Confucianism, rejecting superstitious and mystical elements of Taoism and Buddhism whilst still being influenced by aspects of them.

Dualism/Cartesian dualism –

A philosophical theory or system which divides reality into two domains, especially those of matter and mind. Dualisms can be opposed by, for example, exploring monistic perspectives, or continuums (such as culture-nature).

Ecosophy –
A philosophical approach to the environment which emphasises the importance of action and individual beliefs.

Enlightenment –
A philosophical movement of the 18th century, characterised by belief in the power of human reason and by innovations in political, religious, and educational doctrine.
Think of, for example, scientific revolution, secularism

Epistemology –
Theory of knowledge, particularly with regard to its methods, validity, and scope, and the distinction between justified belief and opinion.

Historical materialism-
is the methodological approach of Marxist historiography that focuses on human societies and their development over time, claiming that they follow a number of observable tendencies. This was first articulated by Karl Marx (1818–1883) as the *materialist conception of history*. It is principally a theory of history according to which the material conditions of a society's way of producing and reproducing the means of human existence or, in Marxist terms, the union of its productive capacity and social relations of production, fundamentally determine its organization and development (Wikipedia).

Intersubjectivity –
Psychological relations between people, emphasising shared cognition as essential to the shaping of interhuman relations. Within New Materialism, and Posthuman, however, intersubjectivity is understood to operate beyond human interrelations –extending to the non-human.

Intra-action –
A concept from Karen Barad (building on Niels Bohr). Agential realism in which relations are effects or 'intra-actions' (the cutting together/apart of difference) within phenomena. As such, intra-actions are observation dependent, and continuously Becoming.

Interbeings (接現)
Chino-Vietnamese term coined by Buddhist scholar Thich Nhat Hanh referring to interrelationality among all actions and things, entities and beings.

Metempsychosis
Transmigration at death of the soul of a human being or animal into a new body of the same or a different species.

New Materialism –
Emerging thought in several fields of inquiry, including philosophy, cultural theory, feminism, science studies and the visual arts, which offers an alternative perspective on materiality, signification, and on knowledge production as practice. It was developed in response to the linguistic turn. The term was coined by Manuel DeLanda and Rosi Braidotti in the second half of the 1990s.

Nomadic –
Deleuze and Guattari's (1987) concept for the dehierarchisation and deterritorialisation of power relationships in, for example, science, knowledge production or socio-political contexts.

Nomadic art –
Any art practice that traverses and opposes borders and hierarchies between territories or domains (real or virtual).

Nomadic subjectivity –
Subjectivity in flux Rosi Braidotti (2011). In the context of economic and cultural globalization, for example, it reflects multiple forms of mobility that operate outside the concept of nation-states, identity politics and essentialist ideologies.

Nonhuman –
Does not refer solely to, for example, other animals with human-like characteristics (such as primates), but to all things, objects and entities that are not human.

Non-linear time –
A non-chronological and non-cyclical intertwining relation between past, present, and future (and future-past).

Ontology –
Brach of metaphysics dealing with the nature of being.
Set of concepts and categories by subject area or domain organised by properties or the relations between them.

Posthuman –
The state of being beyond human. Posthuman discourse seeks to reconceive the notion of the human and anthropocentric subject: the human is no longer superior to the non-human, but one being among others (Rosi Braidotti 2013).

Temporality –
 Having a relation to time, both in human and non- human perception.

Transhuman –
The human as evolved beyond its physical and mental limitations, especially by means of science and technology.

Transversality –

An important concept in New Materialism: 1) as a thinking practice it has been developed by many theorists in different spatial-temporal and disciplinary backgrounds, and 2) it "cuts across or intersects dual oppositions in an immanent way" (Dolphijn, V/d Tuin 2012:22). This means that the type of affirmative relations of representation can also function as deterritorialising.

(https://newmaterialistscartographies.wikispaces.com/Transversality)

Introduction to the Contributors

Editor

Kristiina Koskentola is a visual artist, PhD. Currently she divides her time between Amsterdam and Beijing, where she overwinters. In her recent projects, Koskentola works with issues of subjectivity and agency, ethicality and inclusivity among multiple co-actors, human and nonhuman. She reconfigures immediate and expanding spatial, temporal, material, socio-political and otherworldly conditions, exploring flows and systems of interdependence. These reflections manifest as constellations of media (including video, photography, materials, stories and objects), as interactive performative projects, and as lectures. She has conducted talks, lectures, workshops and other academic work in different institutions and contexts.

Contributors

Rick Dolphijn is a writer and a philosopher. He teaches and researches at Utrecht University, Faculty of Humanities. From 2017 to 2020 he will be Honorary Associate Professor at Hong Kong University (Hong Kong). He wrote Foodscapes: Towards a Deleuzian Ethics of Consumption (Eburon/University of Chicago Press 2004) and New Materialism: Interviews and Cartographies (Open Humanities Press 2012, with Iris van der Tuin). He has recently published This Deleuzian Century: Art, Activism, Life (edited by Rosi Braidotti, Brill/Rodopi 2014/5). He writes on contemporary, on art, theory and politics. Currently he is finishing a new monograph entitled Cracks of the Contemporary.

Fu Xiaodong is a Beijing-based independent curator, critic and Founder of Space Station. She served as Executive Editor-in-Chief of the magazine Fine Arts Literature and is Artistic Director of China Young Artists Project, Artistic Director of T. Art Center as well as editor of Meiyuan, the journal of LuXun Academy of Fine Arts. She was Visitor Curator at 24HR ART (Australia) and the Centre Pompidou-Metz. Her curatorial projects include the 8th Shenzhen International Ink Painting Biennale, the 3rd Hubei Documentary Exhibition of Fine Arts, 2010 Get It Louder, 'Doubleflyart Absurdity Award' at Today Art Museum, 'Through the Body' at the University of Toronto Art Centre, the 13th and 15th OPEN Performance Art Festival. Since 2012, she has been leading the project 'The 8th Day – Artists in Scientists' Laboratories' in collaboration with Guokr.com.

Rumiko Hagiwara was born in Gunma (Japan) and studied at the Tokyo Zokei University in Tokyo (2000-2004). She was an artist in residence at the Rijksakademie van Beeldende Kunsten in Amsterdam (2008-2009).

Hu Wei currently works and lives in Beijing. He graduated from CAFA, 2012, and obtained an MA at the Dutch Art Institute in 2016. His practice takes in various media, such as video, installation, performance, and writing, to establish an artistic relationship between reality (non¬artistic gesture) and "art tales". Combining the observation of individuality and social realism, his recent work explores the mediation or irreconcilable phenomenological gap, between technology and the human condition, in which emerging political, economic, ethical issues are embedded. Recent exhibitions include: Towards the Emergence of Resistance, Taikang Space; Collective Disorder / After Speaking Greylight Projects; Shanghai Projects-¬Qidian, Himalayas Museum; Songs For A Deaf Ox, NL; Break The Floor, Rabbithole, NY; Beginnings of Conversations, Tehran. He has also been an artist-in-residence in Portugal, the Netherlands and Mexico.

Jussi Koitela is a curator currently moving between different projects in France, Norway, and Finland. Since 2012 he has been working on and with artists' responses to economic structures and discourses in the context of his 'Skills of Economy' curatorial research. Koitela is interested in developing curatorial, institutional and discursive practices that act in the merged areas of an artistic practice; research and politics in holistic forms. His recent curatorial work includes: Entangling Matter and Meaning and Intra-Sructures – Monster of the Seven Lakes at Treignac Projet, Agency for De-development in Tromsø at Vårscenefest Festival, Mattering City at SixtyEight Art Institute, City Agents at Estonian Museum of Contemporary Art (EKKM), Skills of Economy Sessions at Finnish Theatre Academy, Baltic Circle Festival and Kiasma Museum of Contemporary Art and Untitled (two takes on crises) – You Must Make Your Death Public at de Appel arts centre. Koitela has edited the Finnish Art Policy Handbook, published by Checkpoint Helsinki and Baltic Circle Festival 2015. During 2015/2016 Koitela was a participant of De Appel Curatorial Programme.

Tuomas A. Laitinen works across and fuses together moving image, 3D-animation, light, sound and installations. In his recent work, he has focused on speculative interfaces, the use of natural resources, human and non-human agencies, and the global economy. Throughout his artistic practice, he has been exploring the circulation of energy and the entanglement of various raw materials in society. He often collaborates with different actors from glass artists to neural network researchers.
Laitinen graduated from the Department of Time and Space at the Finnish Academy of Fine Arts, Helsinki, in 2008. He has participated in exhibitions and festivals around the world, incl. the Bucharest Biennale 7, 2016; SADE LA Gallery, Los Angeles 2015; Moving Image New York 2016; Mildura Palimpsest Biennale, Australia, 2015; 5th Cairo Video Festival, 2013; The Museum of Contemporary Art, Shanghai, 2008; Platform Garanti Contemporary Art Center, Istanbul, 2006. In 2014, Laitinen was awarded the Fine Arts Academy of Finland prize. The award is granted every second year to an

emerging internationally interesting Finnish artist. Laitinen participated in New York in the internationally prestigious ISCP (International Studio & Curatorial Program) residence program in the autumn of 2016.

Shian Law is a Malaysian-born Chinese Australian artist who works across the disciplines of choreography, live art and trans-media performance. Since receiving his Bachelor of Dance from the Victorian College of the Arts, he has worked as a performer, dancer, choreographer and dramaturg. Shian's practice tends towards an analysis of artistic discourse and its situated-ness. Historicity, genealogy and relationality provide central artistic prompts for inquiry in his body of work. He explores how dance and choreography operate to produce meaning that is contingent upon tensions between art and culture; aesthetics and politics; the global and the parochial. His projects typically begin with questioning the identity of the artist as a contemporary construction from which it emanates the problematics of art's autonomy to define itself and subjection to socio-political forces.

His commission portfolios include Dance Massive Festival, Sydney Dance Company, Next Wave Festival and National Gallery of Victoria. He received Tanja Liedtke Scholarship and Ian Potter Travel Grant to undertake research in Berlin, New York, international residencies at Cité International des Art, Ménagérie de Verre (Paris) in addition to independent Queer spaces Extantation (Chiangmai) and Q-Space (Beijing) through Asialink Residency.

Liu Yujia graduated from Sichuan Fine Arts Institute in 2004 and got her Master's Degree in London College of Communication, University of the Arts London in 2009. She currently lives and works in Beijing.

Liu Yulia's practice mostly involves videos and photographs, exploring the boundary between real and virtual, with object, time, space and landscape reconstructed and narrated in fragments into a certain situational experience in common, hence to imagine and discuss the human condition.

Sascha Pohle lives and works in Dusseldorf, Seoul and Amsterdam.

His recent exhibitions include 2017 „Friendly Patterns' Galerie Bernard Knauss, Frankfurt, DE, 2017 'Well Made. In praise of the creative process', Kunsthal KAdE, Amersfoort, NL, 2016 'Given Time', Black Sesame, Beijing, CN, 2016/17 The 3rd Today's Documents BRIC-á-brac The Jumble of Growth, Beijing, CN, 2015-16 'Plastic Myths', ACC Asia Culture Center, Gwangju, KR ,2015 'Globale: Global Control and Censorship', ZKM, Karlsruhe, DE ,2015 National Centre for Contemporary Arts (NCCA), Moscow, RU. He won the principal prize at 58th Sort Film Festival in Oberhausen. Sascha Pohle is alumnus of the Rijksakademie van beeeldende kunsten in Amsterdam.

Song Yi is an independent curator and art critic who worked as a senior editor for LEAP Magazine. Recent curatorial projects include "Critical Mass: Hsieh Ying-chun and His Team" (Chongqing, Xi'an, 2015) and the "Local Movement Forum", an on going project started in 2013, had presented in Shanghai, Shenzhen, Beijing, Chengdu, and Xi'an. Earlier projects include serving as coordinator of the "Long March Project" that traced the Ho Chi Minh Trail through China, Vietnam, Laos, and Cambodia in 2010, and working as the Beijing Section coordinator for the 2010 Shanghai Biennale. Songyi currently lives and works in Beijing, China.

Miguel Ángel Rego Robles is an artist and researcher who lives in Spain. He studied Computer Science and Fine Arts at Complutense University in Madrid and is currently working on his PhD at CSIC (Spanish National Research Council). He studied a Master of Arts degree at the Dutch Art Institute in Arnhem, the Netherlands. He was awarded a pre-PhD scholarship at the CSIC (Spain) and is a member of the editorial and artistic collective Brumaria. He has exhibited his projects and lectured in Spain (LABoral Gijón, Casal Solleric Palma, Fabra i Coats Barcelona, Galería Cero Madrid) and internationally (Sazmanab Tehran, The Showroom Arnhem, XIX Bienal Cerveira Portugal, Charim Gallery Viena).

Marina Vishmidt is a writer. She is a Lecturer in Culture Industry at Goldsmiths, University of London and runs a Theory seminar at the Dutch Art Institute. Her work has appeared in South Atlantic Quarterly, Ephemera, Afterall, Journal of Cultural Economy, Australian Feminist Studies, and Radical Philosophy, among others, as well as a number of edited volumes. She is the co-author of Reproducing Autonomy (with Kerstin Stakemeier) (Mute, 2016), and is currently completing the monograph Speculation as a Mode of Production (Brill, 2018).

Jo Wei lives and works in Beijing. One of her research directions is AST (art science and technology), including bio-art and its relation with history of science, and society; a case-study of Chinese and International bio-artists & institutes; the collaboration between scientific organizations and artists. Her recent curatorial programs include When Forms do not Become Attitude- Encounters between biology and contemporary art (CAFA Art Museum, 2016); Towards the Emergence of Resistance (Taikang Space, 2016). She is also co-curator of Beijing Media Art Biennale - Ethics of Technology. Currently she is a researcher in Beijing Visual Arts Innovation Institute of CAFA(Central Academy of Fine Arts) and teaches bio-art and bio-design in CAFA as guest lecturer. She is the founder of Pan-Bio-art Studio (PBS).

Tian Xiaolei, Beijing based artist, is working with digital media. His recent solo exhibitions include Katzman Contemporary Gallery, Toronto, Today Art Museum, Beijing, Meulensteen Gallery, New York, and Songzhuang Art Center, Beijing. He has won and been a finalist for numerous awards such as in 2017 the "Wallpost artist Outstanding award" Today Art Museum and "Art China Young artist of the year". Tian is a graduate of the Central Academy of Fine Arts (CAFA).

Yang Jian works primarily with video and installation. He received a BA (2004) and MA (2007) from the Art College of Xiamen University and was a resident artist at the Rijksakademie Van Beeldende Kunsten in the Netherlands from 2009 to 2010, supported with funding from Stichting Niemeijer Fonds (NL). He has exhibited extensively in solo and group exhibitions in the UK, the Netherlands, USA and China. He currently lives and works in Beijing and Nanjing, China.

You Mi is a Beijing-born curator, researcher, and assistant professor at the Academy of Media Arts Cologne. Her long-term research and curatorial project takes the Silk Road as a figure for deep-time, deep-space and nomadic imageries. Under this rubric she has curated a series of performative programmes at the Asian Culture Center Theater in Gwangju, South Korea and the inaugural Ulaanbaatar International Media Art Festival, Mongolia (2016). Her academic interests are in performance philosophy, science and technology studies, and philosophy of immanence in Eastern and Western traditions. Her writings appear in Performance Research, PARSE, MaHKUscript: Journal of Fine Art Research, among others.

Zheng Bo is an artist, writer, and teacher from Beijing, currently based in Hong Kong. Zheng is committed to socially and ecologically engaged art. He investigates the past and imagines the future from the perspectives of marginalized communities and marginalized plants. He has worked with a number of museums and art spaces in Asia and Europe, most recently TheCube Project Space (Taipei), Power Station of Art (Shanghai), and Villa Vassilieff (Paris).