Breathtaking Greenhouse Parastructures

a supplement to the Arcades Project from a Caribbean Perspective [and a call for a careful practice of epistemológica].

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Doctoral Thesis in Art Technology Design

TRITA-ABE-DLT-2020
ISBN: 978-91-7873-592-1

Hagamos campos cultivables donde solo hasta ahora la locura se haya hinchado desenfrenada. Avanzemos con el machete afilado por la razón y sin mirar de derecha a izquierda, así para no caer como presa del horror que nos atrae desde las profundidades de la selva. Toda tierra debió haber sido cultivada por la razón, limpiada de la maleza del delirio y del mito. Se supone aquí que para el siglo [XXI] este acto sea consumado.

To cultivate fields where, until now, only madness has reigned. Forge ahead with the whetted axe of reason, looking neither right nor left so as not to succumb to the horror that beckons from deep in the primeval forest. Every ground must at some point have been made arable by reason, must have been cleared of the undergrowth of delusion and myth. This is to be accomplished here for the terrain of the [21st] century.
NOTES ABOUT THIS DIGITAL VERSION

PLEASE MAKE SURE YOU SET YOUR PAGE DISPLAY TO TWO-PAGE VIEW (in ACROBAT view>page display>two page view, in PREVIEW view>two pages)

The bookmark here to the right can be printed, and is included to aid you through the reading.

You will find many links connecting to related references.

There are webpage links that will connect you to the online Intransitive Journal. The triangle marks (to the right), as well as the titles and marks on the TABLE OF CONTENTS, will link you to the related parts of the book.

Passages through the book labeled, e.g. [see c.(X),], will also link to specific areas of the book, offering, on the top margins, a return-to-page link, e.g. return to p.Z

On the sections of each convolute titled SCAFFOLDS OF TERMS, on each definition you will find a page number corresponding to its bibliographical reference appearing on the INDEX OF TERMS. Likewise, the page number appearing on the INDEX OF TERMS will link you back to the corresponding definition.

Lastly, on the section INDEXICAL PROTOTYPE (that you can find on c.(C)_1 REMEDIATING THE INDEX) each plate of images will offer a link to its corresponding source-information on the LIST OF FIGURES. Likewise, the page number appearing on the LIST OF FIGURES will link you back to the corresponding plate.

I hope you trust these possible interactions...

*method is indirection.*
**Breathtaking Greenhouse Parastructures** is here presented as doctoral dissertation for the Art Technology Design PhD Programme between Konstfack University of Arts Crafts & Design and the Royal Institute of Technology (KTH) of Sweden.

With this bookmark I remind you that it is a work of research based on art methodologies. It pertains to the genres of installation, environmental art, and social science fiction. As such, it offers no solutions. In fact, it is part of the problem. And that is the thrust...it is a practise-based research effort, shaped through my Caribbean perspective, that evolves into an indirect metanarrative working in the service of complexity, uncertainty, and speculation. The main site of that reflexive process is the book. And what you will find is an experimental treatment of the technology of ‘greenhouse’ presented as a boundary object for marginal discursive and sculptural studies. Through it we will ‘walk’ so to (re)mediate the seemingly-inescapable destiny of Global Warming. That iterative, and at times repetitive metaphorical walk is formatted so to question how ‘greenhouse’ (dis)embodies the spectres of colonial memory that drive Global Warming; and, in turn, offer a diverse deposition of ‘greenhouse’ that is *life-affirming*, rather than messianic or toxic.

Aside from the book, you may also choose to rely on an online journal, and on an installation. The online *Intransitive Journal* offers links to other texts, images & videos [at www.intransitivejournal.org] related to the doctoral process. The installation, titled *Anarquivo Negantrópico* [or *Anarchive*], is located on the periphery of Copenhagen. It is my latest installation for related research and actions taking place for, and beyond the PhD. You can find its documentation on the *Intransitive Journal* as well.

**Remember, this book is a prop...** it is a theatrical object for inquiry and reflexion; it is a proportional supplement to Walter Benjamin’s unfinished opus *The Arcades Project [Das Passagen-Werk]*; and it is a propeller encouraging specialists and experts to address Global Warming as the complex of modern psychosocial afflictions that continues to affect all other disciplines. To address that manifold-complex from a transdisciplinary (if undisciplinary) set of positions, Breathtaking Greenhouse Parastructures will always be open to be read in various ways.

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**Now you may read the book however you like**, but I suggest the **INTRODUCTORY MATERIALS** first. Then you may choose to either (1.) follow the page numbers in their academic order; or (2.) follow the alphabetical-order ['(X)'] of the ‘convolutes’ (which tends to represent an emotional order); or (3.) follow the ['y'] subscript-order (which offers a chronology of the research). There are additional resources such as **SCAFFOLDS OF TERMS, INDICES**, and other **REFERENCE MATERIALS** that can also aid you through your reading. So don’t forget to take this bookmark along with you. It marks the convolutes and resources with the corresponding colour marks that may guide you on your own passage. The convolutes (abbrev. ‘c.’) are:

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**c.(G) METHODS & METAPHORS** overview of related art methods that lean on ‘indirection’, as well as on the use and abuse of metaphor;

**c.(E) SPECULARIUM AT VILLA JOVIS** account of an archæological site that may be one of the beginnings to the Anthropocene;

**c.(F) NONLOCAL–SITESPECIFICITY** brief about the etymology of ‘greenhouse’, with focus on its messianic forms of ‘superstructure’ (as defunct promise and harbinger to the agro-industrial apparatus);

**c.(A) COLONIAL MEMORY** survey from my Caribbean perspective about the problem of colonial violence that is haunting the enframing of technics;

**c.(C) REMEDIATING THE INDEX** brief statement about the semiotic figure of the ‘index’, and how ‘greenhouse’ points to a genealogy of climate change;

**c.(B) DISSOCIATION** where the aura and memory of perception is prismed through the ‘greenhouse’, yielding shades of modern depersonalisation;

**c.(D) EPISTEMOLÓGICA** staging of props, infrastructures, and scientific displays, from the marginalised typology of Epistemológica, to a careful, multiperspectival practice of *epistemológica*. 
The following academic work of artistic research aims to be respectful of all copyright. By reproducing the figures and quotations, I have done my best to uphold the legal doctrine of ‘fair use’—“to promote the progress of science and the arts.” Sources for cited texts and images can be found listed on footnotes, captions, and/or on the appendices. If you find copyright infringement or a mistake please contact me at lberrios@alum.mit.edu

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Konstfack Dissertation Collection No. 1
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Cover & Frontispiece follow the two-volume box/book design of the Suhrkamp edition of Das Passagen-Werk by Walter Benjamin. The topological figure or kleinform illustration is drawn from the Relational Circuit by Paul Ryan.

Breathtaking Greenhouse Parastructures
A supplement to The Arcades Project
from a Caribbean perspective
[and a call for a careful practice
of epistemológica]

Luis Berríos-Negrón

Konstfack Collection

[Dritter Band, V·3]
Adiós a mi Casita (selección, ca.1885)

Implacable destino
Con mano ruda
Me niega los favores
De la fortuna
Y me separa ¡Ingrato!
De mi linda
Casita

Me aleja de la Patria
De la familia
De los dulces amigos
Del alma mia
Pero no importa
Que he de llevarlos todos
En mi memoria

por Lola Rodríguez de Tió (1843 - 1924)

Gracias a mi compañera y socia María Kamilla
Madre de nuestra adorada hija Freia Pilar;
Nuestra columna libre, nuestra diosa del amor

Hago lo que puedo por ellas
y por nuestra Tierra; continuaré
Deponiendo la Serra
con Lola en el pecho
y la Familia en el corazón

[see p.369 in c.(A), for Fig.0]
IN MEMORY of those who lost their lives to, and who are still living with, the effects of the Caribbean hurricanes of 2017.
This work is also in memory of those who still remain forgotten by the unspeakable violences of the so-called ‘discovery’ of the Americas. It is a selective amnesia that still, after 500 years, feels raw…a wound that keeps getting inflamed, now, and again, with the effects of climate injustice borne out of those unspeakable violences. It is necessary to continue the labour of its remediation, for it is, in no small measure, the archetype of the trauma – the very repression of memory – that perpetuates the passively suicidal march towards Global Warming.

I extend my sincere gratitude and heartfelt condolences to all the activists who put their lives on the line every day, and to those who have lost all defending our lands and oceans…not least to Paulo Paulino Guajajara, and Zezico Guajajara, both who were brutally murdered, the former in late 2019, the latter in early 2020. Four more members of the Araribóia territory have also been murdered within the six months between Paulino’s and Zezico’s own murders…all perpetrated by the profiteering criminals who are encouraged, without impunity, by the onslaught of deregulation of logging and cattle on the Amazon. We must collaborate with, and not dictate to, our sisters and brothers defending those transnational bioregions that keep us all alive.

Likewise, I extend my sincere gratitude and heartfelt encouragement to Greta Thunberg and Alexandria Ocasio-Cortez for their fearless work against Global Warming; the former who is from the country that has given me the chance to make this PhD, the latter who makes me particularly proud to be Puerto Rican.

Last but not least, the word ‘breathtaking’ titles this book. It’s had that title well-before I started the PhD, to provoke the double meaning of how I feel about Global Warming…about how the unjust and incomprehensible destruction of our habitats, no less of our breathable air, is at once shocking and suffocating. I now hereby humbly ask you to associate this title to the scream ‘I can’t breath’… for its prescient importance in the current fight for civil justice. Therefore, and in absolute solidarity, I also offer this dedication in memory of Oury Jalloh, Eric Garner, and George Floyd. BLACK LIVES MATTER.
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COLOPHON
INTRODUCTORY MATERIALS
(Fig. 1) The burning Biosphère, pavilion of the U.S. for the World’s Exposition (f.k.a. The Great Exhibition) of 1967, designed by R. Buckminster Fuller and Shoji Sadao, erupting in flames. Montreal, 20. mai 1976. Photo Source: Doug Lehman, Progressive Architecture, August 1976
Breathtaking Greenhouse Parastructures is a doctoral work that deposes the following question:

Is colonial memory the drive of Global Warming?

The question is here set as a rhetorical core. It generates a field from which to contrast and contest the forms and forces that fuel accelerated climate change. To activate the deposition, I put the question through a discursive, sculptural, and performative review of the technological history of ‘greenhouse’ from my Caribbean perspective. I do this because I intuit that ‘greenhouse’ is — beyond metaphor — the illusory and dissociative enframing to colonial trauma; a complex that still-haunts the past, present, and future of the natural sciences (and their histories).

With that on our minds, I would like to first treat you to some initial definitions. When I say ‘drive’, I refer to the force towards a predetermined place or result, a destiny, even a teleology. ‘Drive’ here also refers to instinctive or involuntary reflex behaviours propped by unsatisfied urges and needs. Coming to terms with this reflex is how I parse the difficulty I suffer to understand, not the actions, but the impulses causing Global Warming. I am left to explore, as an artist, what are the forms and forces of this multifaceted pathology, and disproportionate entropy, that exceeds the ability of life to adapt to human pollution and the ensuing acceleration of climate change. That curiosity is what now draws me to investigate, from my Caribbean perspective, if such forms and forces are rooted in how technoscience has evolved into a primary type of death-drive.

I find that what significantly propels this kind of insidious drive may be the force of ‘superrepression’. This second, ancillary term is a compounding of suppression and repression, of memory and of trauma. These two terms, ‘drive’ and ‘superrepression’, are specifically drawn from Derrida’s Archive Fever which of course is in itself a reading of Freud. I am not prepared, nor do I desire to explore the psychoanalytical validities of these terms or claims. In this regard, I rely on Derrida’s own definitions (with attention to the writings of Susan Buck-
Morss, among others). I rely on these as stables that allow me to set and sense the violence that shapes, not the images, but the modern void that is ‘colonial memory’: the subtractive deficiency, say, the entropy that still haunts technics, and that fuels Global Warming as core manifest of the anthropogenic passive suicide, of that apparent death-drive.

To make the void of colonial memory perceptible, I am compelled to explore critical structures of analysis and display, say, of phenomenotechnologies, of infrastructures, and of enframing. Enframing has its discursive roots in the concept of [Gestell]. Broadly speaking, as per Heidegger, the enframing is the questioning of the ceaseless ‘concealment’ of technology’s self-inscription into human life. But, in considering arguments by figures such as Susan Star and Hans-Jörg Rheinberger, about infrastructures and phenomenotechnologies, respectively, I choose to overlook Heidegger’s own warnings about thinking of [Gestell] literally (as mere support structure), striving to also set and sense its own ceaseless concealment of self-inscription through display infrastructures such as relational circuits, boundary objects, and epistemic things.

And that is how ‘greenhouse’ comes about. As an artist, I at once set ‘greenhouse’ to serve as my prop, as my medium, and as my specimen to sense the enframing. I treat it as 1) the primary container and display of colonial memory; 2) as a critical signifier of the deeply mismanaged drives forming and forcing colonial technics flowing between science and technology; and 3) as doppelgänger – as metaphor of the metaphor – to Global Warming.

Now, the technological deposition of ‘greenhouse’ gravitates, yes, from that old and benevolent garden house – the ‘green’ glass house – that is used, mostly, for keeping and pushing exotic, transplanted plants. But, the deposition necessarily extends to its many other uses as metaphor. To encompass those many uses, the term will appear, imperfectly, in three forms: as greenhouse (without quotations) to signify the house/building; as greenhouse superstructure to depose associated Marxian aspects, as well as the vast cover structures for agro-industry (preceded by the iron & glass covered street arcade, proceeded by gated and Martian ‘eco’ communities); and as ‘greenhouse’ (with quotations) to signify the remaining physical, conceptual, and metaphorical uses of the term, namely as gas, effect, and technic.
The broader, illusory aspect of ‘greenhouse’ enframes a system of spectral forms and forces that actively, as [Gestell], conceal its self-inscription at the core of our on-going environmental trauma. I read those spectral forms and forces from my perspective as Caribbean artist, actor, and observer. I do this as someone deeply concerned with the environmental dumpster fire that continues to be fuelled by much of the lingering privileges and apathetic violences of modernity still-preached and peddled by the powerstructures of the Global North. And from that Caribbean perspective, I look to offer eccentric margins for you and I to experiment with, and reflect upon the superrepressions of these toxic attitudes and their drives.

What I want to share here with you is the way I depose the layers of the technology of ‘greenhouse’, and how I, through that deposition, explore what I deem to be modes of research that may play-through as decolonial potentials. These grow from the evolving realisation that ‘greenhouse’ is a physical and metaphorical representation of the rotting logic, and selective amnesia, that superrepresses colonial memory in technics. It is so when colonial memory is understood to be the broad, duplicitous archetype to the modern binary cut between humans and nature, and to the overarching, superstructural illusion of interior | exterior.

What I mean is that the arcane illusion of ‘inside’ and ‘outside’ — and its overarching metaphorical power spanning across so many fields — is that which, at once, cuts and conceals the toxic severances of patriarchal domination central to the colonial impulses still abound in the natural sciences (as practices, histories, and philosophies). I am most concerned by that cut, by that rupture. How it festers in-between the liminal bowels of the sharp and glassy surface of the greenhouse, is the core of what I attempt, with you, to perceive. We will hereon do so by exploring and experimenting with its use and history as technical compound.

Whether physical or metaphorical — say, of greenhouse effect, or greenhouse gas, or greenhouse technology, etc. — these compounds are part of a system of promise for control of the world. They project the spacetime to enframe the modern, hegemonic picture of ‘one world’1. Control and domination is expressed by placing nature, ironically, on

1 “a world where only one world fits”- Cadena, Marisol de la, and Mario Blaser, editors. *A World of Many Worlds* (Duke University Press, 2018) 3.
the ‘inside’, where man thinks he can dominate life – to extract and accelerate, or decelerate and conserve growth – regardless of place or season. That site-less, modern, illusory power sandwiched between the industrial logic of translucent surfaces is that which cuts, represses, forgets, and *fore-gets* the realities of habitable environment. And, it is that system of promise, that messianic capacity for denying reality that causes a selective kind of involuntary amnesia; a suppressing of memory and of trauma that is contained by the industrial spirit of ‘greenhouse’, one that stands to be the concealing void of colonial memory.

Colonial memory is the forceful capacity that continues to destine the terminal, superrepressive logic breaking apart the very object-relations for living. And, I mean that this can be drawn down to the very moment when knowledge is ‘externalised’: the delicate act that, under the consumerist logic, has become a wholly unchecked reflex. It is therefore that I find colonial memory to be – not a remembrance of images – but a capacity to void violence. It exacerbates the broadening crisis of climate injustice, a terminal destiny driving you, me, and pretty much all other biota towards an end that is, at best, devoid of humans.

Conversely, it is said that biodiversity\(^2\) is one of the few proportionate measures that can derail that disproportionate destiny. Therefore, through the PhD, I look to not just asses some of the underlying contradictions that fuel these disproportions, but I also look to explore with you some other diverse ways in which ‘greenhouse’ may become that which makes them perceptible again, and again. Indeed, Breathtaking Greenhouse Parastructures is about manifesting a processual, sculptural, and genealogical deposition of ‘greenhouse’ that (re)members its own form, not as virtual space of industry, but as a transitional support structure for living. It is an interplay that fosters alternative perspectives and marginalities between human and non-human interfaces for nurturing biodiversity. And, it urges a remediation – *of remembering to forget* – how the violence of Global Warming challenges the already-obsolete role of ‘greenhouse’ as messianic archive to the future of natural history.

\(^2\) *“Our results suggest that biodiversity mainly stabilizes ecosystem productivity, and productivity-dependent ecosystem services, by increasing resistance to climate events. Anthropogenic environmental changes that drive biodiversity loss thus seem likely to decrease ecosystem stability, and restoration of biodiversity to increase it, mainly by changing the resistance of ecosystem productivity to climate events.”* - Isbell, Forest, et al. ‘Biodiversity Increases the Resistance of Ecosystem Productivity to Climate Extremes’ (*Nature*, vol. 526, no. 7574, Oct. 2015, pp. 574–77) 575.
To activate this mode of remediation, let’s exercise a walk. I would like to ask for your time and space for this reading to be a patient stroll, say, un paseo tropical, or Spaziergang that you and I take to breathe through the field of that ‘questioning’ posed at the beginning: is colonial memory the drive of Global Warming? I propose this embodied, metaphorical exercise as a manner in which to position and encounter the moments of violence, of rupture and contradiction; as a spatial dis-play to the polemic character of ‘greenhouse’. By characterising Global Warming as a seemingly inevitable march – as a militarised parade destining us, and the Earth lifeless – I hope to offer you a parallel metaphorical walk, not as an escape, but as a detachment from where to perceive that march. It is a detachment where you and I may have, if at all possible, a critical distance to other alternative trajectories. I do it so that, as we walk together, I can share with you my Puerto Rican & Caribbean research perspectives. And, we do it in this manner so that we may together find ways to observe, and walk across the pathos that engenders this bizarre, self-inflicted toxicity.

Do know that I have chosen the technology of ‘greenhouse’ not just for what it may signify, but more so because of its potential to work as our medium: at once as the specimen-subject, truth-sayer, and support-material to our walk. I do so because I sense that this is an embodied manner in which to witness an experimentation with the discourses of Global Warming that goes beyond the hyperobjective hæmorrhage of empty metaphors. I sense that it is a more affective way in which to stand, hold, and depose the character of Global Warming given its scale-less character as manifold phenomenon. Indeed, it is a phenomenon that far exceeds any singular sense, mode of representation, or sculptural display... but for that very reason we must go beyond just mere discourses. Therefore, my walking with you, through the ‘greenhouse’ as a medium for Global Warming, takes its place between the spaces created by the critical analysis of its technological history.

It is a curiosity rooted in my allergy against binary schisms, about negating the colonial, obsolete, historiographic apparatus of ‘greenhouse’: from its past, as a conservative mechanism for extracting and transplanting biota and bioregions (between the Americas, Africa, and Europe, and globally thereafter); and as a future, messianic device promising to shelter humanity from its own terminal, self-inflicted calamity of
Global Warming. The former as a putrescent historical trauma that is still to be fully biopsied. The latter as an ill-conceived and unjust science fiction yet-to-be-set on some distant, inaccessible world for the privileged; right here on Earth, or the Moon, or Mars, etc. etc. etc.

I deem that such recalcitrant past | future dialectical binaries must be heavily diversified as ahistorical recollections. What I mean by ahistorical is that the testing of ‘greenhouse’ at various discursive, sculptural, technical levels – with particular focus on its agro-industrial manifestation as greenhouse superstructure – is a way to unfold and elucidate a series of non-chronological, non-ethnocentric versions of its void of memory; i.e., the spectral forms of colonial violence it withholds concealed and suppressed within its ‘transparent’ surface system.

And, while we face the post-internet, and post-ontological hydrids – as manifolds that far-exceed the pre-digital binary dialectics of history – I believe that between you, me, and this PhD, we can together recall, reclaim, and remember other alternative tractions and perceptions about the spectres of natural history. It is all an act of play and display so that you may be able to revise and reconsider ‘greenhouse’ – for yourself, beyond my own reflexions – as a highly questionable, paranormal model of the forces of Global Warming.

So, with that in mind, let’s walk...

· to see-through ‘greenhouse’ as an interpenetrating spectre coming to talk to us, today, about the nihilistic violence that is deeply buried in the colonial and industrial modernity that still shatters life;

· to sense how that incongruent, self-destructive march towards Global Warming is also to sense ‘greenhouse’ as a potent spectre of technoscience itself – of the necropolitical enframing that drives the Anthropocene;

· and – because the ‘greenhouse’ spectre carries such colossal power – that we shall switch perspectives with it so to sense the madness through the spectre’s own mind’s eye.
Remember, the materials that make the montage of this book (which will follow this Exposé) are set as a schematic entwinement. They are threaded along with my experimental artworks, found historical materials, and related published and exhibited reflexions. Of these materials, you will probably notice that the core-sections of this book are referred to as ‘convolutes’ (marked ‘c.’). I implement the term as literary tactic, following Theodor Adorno’s (1903-69†) use of ‘convolute’ to describe the vast and inconclusive accumulation of written and experienced passages that constituted Walter Benjamin’s unfinished opus of *The Arcades Project* [*Das Passagen-Werk*].

And that brings us to the form of the book... I hope to supplement the *Arcades*, in content and in spirit with the PhD. As supplement, I have decided to format the book for it to ‘attach’ to the two-volume Suhrkamp edition of *Das Passagen-Werk* (1983). By following its graphic language and dimensions, I claim the PhD to be its ‘Dritter Band’ (its third volume, V·3). I do so in the spirit of indirectly (and irreverently) corresponding with Benjamin’s work, while also encouraging other researchers with counter-normative perspectives to add volumes as well. I do my best too to maintain a discursive relation to the Harvard Press edition (*The Arcades Project*, 2002) translated by Howard Eiland et al., as well as to philosopher Susan Buck-Morss’ and artist Patrizia Bach’s own supplements to the *Arcades* titled ‘Dialectics of Seeing’ (1991) and ‘Passagen-Arbeit’ (2017), respectively.

Just like all else on this EXPOSÉ, I will unpack and tell you more elsewhere in the text about my desire to supplement the *Arcades*. But, I will briefly say that it is a desire rooted in the experimental work of art methodologies that build from other art research; in this case to thicken how Benjamin himself thought *through* the greenhouse of the street arcade as method... asking how it could operate as a master object-relation for testing ideas, as a ‘theatre’ for art & science. In sensing that Benjamin did not have a chance to go far enough into exploring how the technology of the greenhouse evolved, I thus take license to supplement what precedes and succeeds the iron & glass arcade, and the *Arcades*, as superstructure, and as archive. By reactivating Benjamin’s ‘theatre’ (as other admired colleagues have) is the way I irreverently pay my respects, in order to then give alternative points of access to a questioning that bears no specific conclusions. It is an open-ended staging that
contrasts the unfinished format of the *Arcades* as an indeterminate artistic interrogative, as well as a way to foster my own broader life-work (the on-going *Paramannerist Treatise*). That is why the convolutes will be made up of editorial and analytical combinations of found citations, of texts I have written, of research I have performed, of artworks I have produced, and of collected figures and illustrations. Likewise, not unlike how I did at the beginning of this EXPOSÉ, each convolute will treat you with a SCAFFOLD OF TERMS – a ‘vocabulary’ – that I have been accumulating prior to, and during the doctoral period. The convolutes often start by referencing either texts of mine that were published, or research activities during the period of the PhD.

Please keep in mind that the convolutes appear in an order you are not required to follow. Yes, the order of words, and the binding of the book, determine a path which I have chosen to address the academic requirements of the PhD. But I play with its possibilities by offering two other options: either by following the order of the convolute’s title letters [i.e., ‘(X)’, which tend to represent the order of personal importance]; or by following the order of the convolute subscript [i.e., ‘y’, which tends to reflect the chronology in which I encountered these subjects and practices]. Yes, there are moments where I make suggested connections between them (i.e., ‘[see c.(X),]’). But I have done my best for each of these text-objects to stand on their own ground, so that these three alternatives – academic, personal, and chronological – may diversify the relations, if any, that you may find to pursue.

As far as that which precedes the convolutes, you will find a DISCLAIMER articulating my background and critical perspective, and an EXEGESIS as reflexion on what has motivated the PhD. You will also find a LIST OF SELECTED ARTWORKS PRIOR TO DOCTORAL STUDIES that has itself two parts, followed by a third REPORT FROM EARTHSORE SPECULARIUM (*Nonsphere* XI, 2015) which was installed at Färgfabriken in Stockholm during the initial days of the PhD. Along with EARTHSORE SPECULARIUM, and the listing of prior works, the experimental installation component that has emerged from the PhD is titled *Anarquivo Negantrópico (Nósfera XVII, 2018-2022)*. Situated on the grounds of Gammelgaard Arts Centre in the periphery of

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Copenhagen, *Anarquivo Negantrópico* [or Anarchive] is discussed at the POSTSCRIPT. It is at once a reflexion and testing of the PhD, illustrated by a selection of materials from the catalogue, or *fanzine*, that was given to the public during its opening on the 1st of September of 2019. More related materials including images and video are on the *Intransitive Journal* [www.intransitivejournal.org].

The REPORT OF EARTHSORE SPECULARIUM is followed by a LIST OF HYPOTHESES, by SUMMARIES of RESEARCH ACTIVITIES, of MEMORIES [related to the Anarchive], of YIELDS, as well as by a LIST OF PhD-related PUBLICATIONS. Thereafter come the convolutes, which, again, are not necessarily to be read in sequence. They are: c.(G)6 METHODS & METAPHORS...; c.(E)7 SPECULARIUM AT VILLA JOVIS...; c.(F)4 NONLOCAL-SITE-SPECIFICITY...; c.(A)2 COLONIAL MEMORY...; c.(C)1 REMEDIATING THE INDEX...; c.(B)5 DISSOCIA-TION...; and c.(D)3 EPISTEMOLÓGICA.

I would like to mention that the found materials and reflexions made about the archæological site of the *Specularium* at Villa Jovis, appearing on [c.(E).] are a crucial research activity that took place towards end of the doctoral period (spring of 2019). That said, I set it on the initial portion of the book considering the critical role the *Specularium* plays, not just in the genealogy of ‘greenhouse’, and on the timeline of the Anthropocene, but also as analogous spirit to the kind of reflexive and speculative work you and I will hereon entail.

Ultimately, the montage of this book (and the triadic interplay it makes with its reference components) is not conceived to be a prescription to resolve, but a pretext to provoke the questioning; to give you a flowing ‘social pedestal’ as a physical and metaphorical object, subject, and surface-medium to observe and activate your own multiple perspectives and perceptions from that marginal ‘greenhouse’. As social pedestal, it is here to offer you long-term sensations about 1) how we conceive and perceive of ourselves with environment; 2) how we enrich the potential methods and object-relations that yield ‘auratic’ infrastructures; and 3) how we thereon foster the careful questions that may aid us in remembering to forget – to ‘re-mediate’ – the entropy, the trauma, the destining of Global Warming.
(Fig. 3) GOES-16 satellite captured this image of Hurricane Irma at Category 5 with winds of 295 kilometres per hour, after decimating the northern Leeward Islands, at about 15:15 EDT, September 6, 2017. Source: NOAA.

(Fig. 2, previous spread) Santa Clara by Carlos Raquel Rivera, 1957. Linoleum etching of devastation by the Category 1 Santa Clara hurricane of 1956, at the height of the industrial-agricultural development of Puerto Rico. Source: Instituto de Cultura Puertorriqueña.
Two weeks later... GOES-16 captured hurricane Maria at Category 4, with sustained winds of about 225 kilometres per hour with higher gusts, after crossing through Puerto Rico, at 11:00 am EDT on September 20, 2017. Source: NOAA.
From hereon I will interchangeably use the terms ‘North’ and ‘West’. I will do so to designate the European, Nordic, and North American hemispheric powerstructure that has Globally divided and shaped, for the last 500 years, the ‘modern’ conceptions of nature — of natural resources, of natural history, and of the natural sciences — all to enforce the picture of that world ‘where only one world fits’. For the purposes of our walk, the term ‘modern’ will also be, at all times, ancillary to ‘North’ and ‘West’ as key signifier to the ethnocentric drive [see c. (B),] of global-industrial, colonial, and neocolonial technoscience.

I am aware of the limitations I may be setting by omitting Asian, Pan-Asian and Pacific regions, drastically reducing the broader definitions of what modernity, colonialism, and technoscience may constitute beyond European, American, and African geographies. But as a person born and raised in Puerto Rico (a present-day colony of the United States) who still has the privilege of coming home to my family, while collaborating with my partner to care for our daughter, and gardens, on the Nordic European regions, I will take license to discuss Global Warming as the toxic model of the so-called ‘discovery’ of the ‘New World’.

(Fig. 5) Anonymous street art to welcome Donald Trump after hurricanes Irma and María. Calle Ribot Parada 18, Santurce, Puerto Rico, 2017. Source photo: Berrios-Negrón.
Surely, I am far from being read-in into all the politically and academically correct languages of colonial and post-colonial critique. Again, I speak in first person from my Caribbean perch as someone who was brought-up, and continues to live-through an overt, passively violent and deeply unjust state of conventional colonialism. And it is that experience and current position that encourages me to affirm that this is neither about professing objective purview, and much less about claiming innocence, nor assigning guilt. I sense that by now (for the exception of some egregious cases, a very few of which I point-to in the book’s dedication) is anyone either purely guilty or purely innocent.

It is with that ambivalent (but not neutral) weight that I carry-on as a researcher to ask & explore what I intuit is deeply embedded in the overbearing human dimension of technics. That premonition draws me to engage what is clearly becoming the incongruent, contradictory, and disproportionate entropy that is Global Warming. And, what I am finding is an elusive, spectral, unchecked and systematised erasure of Western colonial memory. Through the acts of searching, deposing, and displaying, I focus on asking if and how does that ‘erasure’ – as historiographic superrepression and technological concealment [see c.(A)_] – take hold. I do this not as a Western affirmation, but precisely as an active reversion and deposition of the very privilege and enframing upon which these ideals gain traction and self-inscribe. I speak specifically of technics because, although I find that its analysis and use [see c.(A), & c.(D)] do productively articulate the elusive blur of reality and perception in the post-ontological age of digitalisation – and even of Global Warming – I find that such analysis has remained, at best, largely aloof of its own colonial traces.

Now, at the top of the EXPOSÉ, I ask if colonial memory is the drive of Global Warming? If I were to expand the question I would then ask: is the questioning of the relations between science and technology, as an unchecked Western mode of ‘self-writing’ of history, the key to access and intervene on the driving forces of Global Warming? As an artist, I correspond and unpack the question by turning to my practice-based research. Not just do I reflect on the discursive materials resulting from the questioning, but I experiment with them by way of the manners in which the forms and forces of this systemic inscription may be revealed and perceived – not
from my sculptural or spatial determinations – but from how those determinations may facilitate multiple visual and non-visual margins and perspectives: whether as colonising-, colonised-, or bystanding-subject.

In the context of the PhD, the determinate form of a built greenhouse, and its indeterminate form as concept and technology, becomes, not the output, but the boundary object – say, the prism, the vehicle, and the pedestal – that aids me and my audiences to share these possible perspectives. The experimental dimension lies in testing ‘greenhouse’ as theater and display to interface those hemispheric powerstructures. Can its geographical, spatial, and environmental transgressive capacity delineate the spectral ‘nature’ of the colonial modes of industrial exploitation and extraction (which can be assimilated to Western modes of knowledge production)? Can this multi-perspectival delineation be heightened by reminding the violent trajectories ravaging across Africa and the Americas for over 500 years, so to replicate colonial and neocolonial reach onto the rest of our planet?

Yes, there is plenty evidence of indigenous-, first civilisations practising colonial violence long before the Western ‘discovery’. But, there are two suspect elements that shape my personal perspective: 1) it is rarely discussed how profoundly and, at best, unethically profitable the ‘discovery’ was for Europeans (on both sides of the Atlantic); and 2) how profoundly, homicidally genocidal was the European ‘discovery’ to all forms of life in Africa and on the Americas. I feel strongly that the deliberate confusion, or active thinning of the industrial responsibilities liable for the ‘discovery’ are very much part of a still-active, tactical and systematised violence of historical suppression and of depersonalisation. To diffuse and deter the just remediation and remuneration of the crass injustices of these brutal acts – that have been traumatically perpetrated, and systematically diluted or ‘forgotten’ – continues to be central to that particularly disgusting logic of a ‘clean’ modernity we have simply not left behind.

Therefore, as I am aware of the complexity of this questioning, I have no choice but to supplement the aforementioned ‘modern’ ‘North’ ‘West’ interchangeability with a ‘spatialised’ approach to the violence of
modernity⁴ that was, and still is subjected onto the Caribbean...now in its latest form as climate injustice.

That injustice results from the global commodification of human and non-human life as standing reserve modelled through the ‘discovery’ of the Caribbean, and of the Americas. It still serves to this day as an abusive and disproportionate mode of profiteering by those who control the so-called free market. Such violence has projected its toxic economies of disparity, of injustice, and of despair for centuries. But, the project is slowly and surely spinning out of their own control, coming to a fever-pitch in the haunting form of Global Warming.

And, that is why I refuse to prolong the withered amnesia of unspeakably bloody violence that took place on the Americas and on Africa, then, and now. These brutal colonial and neocolonial projects have turned into assumed drives and reflex behaviours, where human and non-human resource depletion becomes a suicidal mass-disorder called ‘natural resource exploration’ (from oil, tar-sand, fracking, rare plant & mineral extraction, to economic warfare, whaling, poaching, deforestation; whatever). And, it occurs at such scale and in such deeply embedded ways that these reflex behaviours become themselves the essence of confusion between technology and science.

Have steps been taken to address some of these past abuses and future systemic problems? Sure. But far too many of these paternalistic behaviours, of unnecessary and unwarranted acts of dominance and exploitation, are still spreading as a terminal psychosocial disease. The behaviours linger unchecked at our own peril, all in lieu of the ultimate hegemonizing force: the by-product of global open-market consumerism, the life-less force that cuts humans from the environment; the seeming destiny of Global Warming.

⁴“(R)etelling the story of modernity through spatialisation/globalisation exposed modernity’s preconditions in, and effects of, violence, racism and oppression […] The spatial in its role of bringing distinct temporalities into new configurations sets-off new social processes. And in turn, this emphasises the nature of narratives, of time itself, as not being about the unfolding of some internalised story – the self-producing story of Europe – but about the interaction and the process of the constitution of identities - the reformulated notion of (the multiplicities of) colonisation.” - Massey, Doreen B. For Space (SAGE, 2005) 63, 71.
(Fig. 6) Montage titled Um Charuto a menos para o tubarão… (One less cigar for the shark…) shown at my exhibition Impasse Finesse Neverness at the Museum of Archaeology and Ethnography of Salvador da Bahia, Brasil (2017) based on the painting América, by Stephan Kessler, oil on canvas, 153×250cm, datum ca. 1650-60. Base photo by Berríos-Negrón from the Pinacoteca de São Paulo 2013.
nos para o tubarão...
(Fig. 7) Industrial greenhouse superstructures from the road at dusk... the ‘Plant PhenoLab’ of the University of Copenhagen at Højbakkegård using magenta light for their crops (separate from the conventional high-pressure sodium lamps), taken on 15.nov.2018. Source photo: Félix Becker.
I left Puerto Rico to study... to find ‘a better life’. Early on, naively, whenever I wanted to reminisce, to feel at ‘home’, I would go to botanical gardens to find the illusion of that sensation, to stay and delay the melancholy. I was drawn more and more to greenhouses for their familiar, seductive, ‘tropical’ spaces – some sort of benign, comforting aura – expecting something inside would replace life with a comforting yet insufficient memory, an abstraction of life. Not quite consciously, I started digging into the history of greenhouses, spending more and more time around them. Their concept and technology began to influence my experimental work. I had already been probing infrastructures of display and archives as subject-matters, and over time, the term ‘greenhouse’ became the core subject and object of my work. And, the sensation of their aura began to radically change.

(Fig.8) Nonsphere XV: Earthscore Specularium, Färgfabriken, Stockholm, 2015. Source photo: David Fischer.

I began processing my memories as the ones that resemble those greenhouses you barely perceive at night, when you’re riding late, on any distant rail or rural highway, passing them by as they project a loosely perceptible glow, a kind of subtle, misrecognisable aura.

5 “The Mechanical Mirror (that has a memory) [...] is the museum as a colossal, framed mirror in which man contemplates himself freed from the material cares and dedicated profound reunion with the world of images. Images that no longer represent the world but instead have put them-
That aura conjured, not an old, benign seduction, but more so a vague haunting of a ghostly figure that began to influence my parallel, long-standing curiosity and perplexity about what drives the forms and forces of Global Warming. Mainly, I am haunted by what it is that drives what now seems to be an inevitable march towards a terminal lifelessness, a destiny of Global Warming. I am haunted by it, by that which I cannot, or refuse to understand. What I have therefore done, over time, is to reflect upon this curiosity as an ‘inference’ that I recursively look to labour-through... through the potency and potential of the ‘haunting’.

In 2015, within the first year of my doctoral studies, I made a large-scale installation titled Nonsphere XV: Earthscore Specularium. The work took the form of a ca. 120m\(^2\) habitable model of a ‘greenhouse superstructure’ composed mainly of wood and translucent polycarbonate [see LIST..., pp.97-129]. The structure traversed North to South the interior and exterior of the main exhibition space at Färgfabriken Konsthall, and provided a housing for my partner, our 18-month-old daughter, and I to live in the installation as an open-ended probe. As part of the probe, we invited and hosted thirty guests who stayed one or two nights with us at the installation. The work was installed primarily as an ‘enactment’ of what it would be to perceive life through the greenhouse as a principal, projected technology for surviving a future world of accelerated climate change. The enactment unfolded for us various physical and conceptual dimensions, many of which we will visit elsewhere here through the book, with writings and images that you and I are here to procure. But, for the moment, I want to recall for you the initial moment of encounter with Earthscore Specularium.

What once was a benign, comforting aura, a banal glowing surface of light and shadow of the greenhouse, became less of a visual image, and more of a texture and memory – a haptic and mnemonic haunting. This ‘spectral figure’ of the greenhouse became instead a fading figural dimension that, to me, on the ‘surface’ of the mental landscape of my

\[\text{Hopf, Alexandra. Future Show November - December 1948, the Museum of Non-Objective Art [a Recent Reconstruction] (Salon-Verlag, 2010). 22.}\]
memories, brought ‘spectre’ and ‘aura’ in close proximity as the point of encounter with Earthscore Specularium. Ever since, I work for the memory of that encounter... to catalyse the shaping of an intransitive ‘surface-medium’ of radical ecology; an object-relation that serves as simultaneous sculptural specimen and support structure for the ‘auratic’. The intransitive quality of this simultaneous specimen and structure is one I will be referring to as the infrastructural figure of the ‘social pedestal’. I work through this figure as mode for questioning, not just my own, but what may be our shared (common yet divergent) notions about the problems, the ruptures of perception we face today due to our widening dissociations (and depersonalisations) from nature.

“...what radical ecology contests is human dominion over the natural world — that is to say, ecological sovereignty in all its many guises. This political contest too may turn on a grain of sand, on a few words, deeds, or circumstances that might alter the pattern of that future predicted by (and predicated on) today’s ecologically and socially destructive forms of life.”

Earthscore Specularium is itself an industrial ghost of Global Warming. It is a memory we never experienced before, coming back to talk to us in present time, again and again (to me, to my partner, our daughter, and to our guests). The main story that Earthscore Specularium seems to ‘tell’, as an environment, is about how the many complex definitions of ‘greenhouse’ as manifold have become, not a banal representation, but a disconcerting sensational spectre; a spectre of what the future of Global Warming may bring unless deposed and derailed. In the coming

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6 “When aura lapses into its degraded form, this is arguably because these prior forms of the social are transcended: looking becomes voyeuristic appropriation, stories become information. This reading allows us to understand the possibilities inherent in auratic experience. It prevents us from taking a one-sided reading of Benjamin on technological destruction. We can read Benjamin’s ‘other side’, his stress on the importance of the aura ‘beyond the melancholic interplay of nostalgia and redemption’ (Benjamin, A. 1991, 150). Such a reading may begin to explain the contradiction whereby the death of aura is welcomed as an integral part of Benjamin’s utopian project, while at other times aura is revived for the same utopian ends in terms of a distinction between social forms and their specific contents. The question that remains for us, the question Benjamin never solved, is how to develop a theory of technology that retains the ethical intersubjective qualities of the aura, without its repressive aspects.” - Cooper, Simon. Technoculture and Critical Theory: In the Service of the Machine? (Routledge, 2003) 65.

pages, specifically through the *montage* of convolutes of this book, you will find a broad genealogy of 'greenhouse’, more detailed documentation from *Earthscore Specularium*, as well as other related artworks of my authorship.

But before moving on, let me breakdown the three parts of the title *Nonsphere XV: Earthscore Specularium*, as it sets the tone for all else:

1) *Nonsphere XV* refers to the fifteenth iteration of my broader series of installations, *Nonspheres*, that started in 2006 [see *LIST*...pp.78-81]. The title of the series is a loose negation of the broad problems I find in the fetishized concept of ‘spheres’. But far more importantly, my *Nonsphere* series are a concerted recognition of *noösphere*. In principle, conceived around the 1920’s by biogeochemist Vladimir Vernadsky and by philosopher Teilhard de Chardin, *noösphere* is to me the (non)sphere of human thought as productive, and potentially toxic, geological force.

2) *Earthscore* refers to a notational system initiated by artist and semiotician Paul Ryan (and elaborated with his collective Raindance and partner Jean Gardner, among others, since the late 1960’s until 2013, year of his untimely passing). This ‘system’ evolved from what we would now refer to as a life-long form of ‘practise-based research’, through video and performance art, that would generate “an information transmission system based on shared perceptions of environmental realities, rather than on language.”

3) *Specularium* is in reference to three qualities: a) what in Roman-Latin is the capacity of a surface material to be simultaneously transparent and reflective; b) to the name given to the first known greenhouse ca. 30CE at Villa Jovis in Capri; and c) as an inconspicuous reference to the intense weight the term ‘speculation’ carries today – from global finance, to radical philosophy, and many other fields in-between.

There, flowing between the three terms, is the thrust of my critique of ‘greenhouse’ as doctoral work. My first impression of the ’spectre’ is

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that ‘greenhouse’ is an opaque and dispassionate manifold of meaning. Its multidimensional opacity, the one that comes from its dispassionate ubiquity, is not just the result of a layering that occurs when considering its many now-banal definitions. It is more so the result of the suppressed colonial violence that becomes implicit to the technological instrumentalisation of that banality. That colonial violence – as the ‘mythical violence’ it embodies, in this case as chief technology for the willful and unchecked transplantation of the exotic – is at the heart of all other compound terms and subsets of ‘greenhouse’; and I insist that it is still-concealed in the technical drive buried in modern human ‘objectivity’. Broadly speaking, I have been working on how this opacity obscures a range of forces that shape our present dysfunctions from environment. More specifically, I explore how these opaque forces may be perceived through the forms and languages of sculptural and spatial production, beyond prescribed visual or imagined outcomes. The work you will encounter here is therefore an ongoing probe to test how the violent manifold opacity of ‘greenhouse’ may be deposed, decompressed, and remediated.

At present, the opacity of the ‘greenhouse’ manifold seems to be at its most intense when considering how the agricultural industry and its ‘free’ markets are now actively looking to profiteer from Global Warming. To me, this has to be one of the strangest manifestations of lifeless contradiction, of the necropolitics related to the exploitation of the term and technology of greenhouse superstructures, i.e., of large-scale greenhouses for industrial agriculture.

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9 “Each ordinary Three dimensional body - ink pot, house, captive balloon - is the perspective projected by numerous 4-dimensional bodies intersected upon the 3-dimensional medium [...] And, since I found that one should make a cast shadow from a 3-d thing, any object whatsoever — just as the projecting on the sun of the earth makes two dimensions — I thought that by simple intellectual analogy, the fourth dimension could project an object of three dimensions, or to put it in another way, any 3d object which we see dispassionately is a projection of something 4d, something we are not familiar with. It is a bit of sophism, but it still was possible.” - Marcel Duchamp paraphrasing Esprit Pascal Jouffret, ‘Dialogues with Duchamp’ by Pierre Cabanne, 1966, cited in the essay - Molderings, Herbert. ‘Bicycle Wheel and Bottlerack: Duchamp as Sculptor’ (Hatje, 1999) 40.
The counter-intelligent exploitation of agriculture (and food security) strongly suggests that the term ‘greenhouse superstructure’ does not consider its political and economic— if Marxist and Marxian— registers, becoming an ideal, loaded point of departure to unfold the broader polemics of ‘greenhouse’ and the cultures driving Global Warming. And, that polemic load seems most entrenched at the point where the ethos and logos of greenhouse technology, of intrinsic value and of studious specificity, are dissociated from an insidious pathos that drives the illusory effects, making accelerated climate change seemingly, strangely imperceptible.

To examine this necropolitical\textsuperscript{10} counter-intuitive counter-intelligence I treat the greenhouse superstructure, at once, as a technological specimen of study, the framework of our context, as well as the platform for observation itself. The deliberately tautological process is set forth as a political post-ontology to contrast and iterate that deep contradiction of ‘greenhouse’, not only of being a solution—as messianic technology for ‘food security’—but also of it being a crisis as duplicitous generator of toxicity, and insidious facilitator for colonial and neo-colonial power.

To conjure that entrenched polemic spectre of greenhouse superstructures, I here set forth this doctoral qualification as an ‘index’ that is potentialised by this, the book you are now reading, and its referential components, namely the installation and online journal discussed in the EXPOSÉ. I propose that the interplay between my research materials gives life to that index as one that points, not to resolved findings, but towards potentials for deposing the essential technology of ‘greenhouse’. What may emerge from the deposition is a broader array of perspectives about colonial contradictions and significations, as well as an applicable methodology for sculptural engagement that goes beyond my own intent.

\textsuperscript{10}“Frequently effected through necropolitical alliances between the state and corporations, and said to serve the national common good, these practices create expendable populations [human and non-human] in massive [and disproportionate] proportions.” - ibid. Cadena 2018, 2, and;

“Which engagements can we imagine dying for, or at least waging a war for? Twenty years ago, scientists waged such a war against deconstructivist critiques. But the “science wars” were waged not to defend a commitment to obligations or the particular ways these scientists engage the world. They were waged in the name of universals such as “reason” or the “advancement of knowledge”, and as such, they excluded the possibility of [speculative] diplomacy. This question has been central in my writing of Cosmopolitics.” - Isabelle Stengers, in Cadena 2018, 85.
What I mean is that my dissertation, as index, points to how we may simultaneously go deeper to reconsider the productive aspects of scientific observation, while contending with the still-evolving challenges of dematerialised sculpture and conceptual art production. By experimenting with the possible, associative experiences generated by the indexical figure – as a yield of unforeseen environmental forms\footnote{Environmental form is the way I reluctantly admit to the disintegration of the natural, giving a compound name to all the new forces - psychic, social, and technic - that invisibly shape our sensations in lieu of accelerated climate change [see TERMS in c.(C)].} – then the manifold of spectres may emerge in-themselves for you. I present this experimentation as a type of sculptural engagement, say a séance, staged on the social pedestal for ‘table-turning’, for associative re-mediation, for auratic dis-play [see c.(D)].

The operative qualities of appearance and disappearance of the social pedestal are specific to the way ‘index’ is defined by Charles Saunders...
Peirce (1839-1914†). According to Peirce, in *Divisions of Semiotic*, a ‘sign’ is articulated by three forms: by the icon, the symbol, and – between them – the index. The Peircean index is unique in that it infers the intuitive and scientific potential of semiotic form. I set it here to build a hypothesis, where its core question serves as an index that “substitutes a great series of predicates forming no unity in themselves, unto a single one (or small number) which involves them all, together (perhaps) with an inde inite number of others”.

In other words, an index is an orientating semiotic form that energises the triad of ‘relations’ that constitute a sign – not as an object, but of the possible object-relations in themselves. It functions, not unlike a rhetorical question, as a sign that stands in continuity, with no beginning or end. It is an interplay that may aid us compose, test, and observe further questions… case in point, that the indexical form of the *social pedestal* this doctoral work is relying-upon energises and displays unforeseen relations about the post-ontological manifold of ‘greenhouse’; as embodied metaphor that challenges the destiny of a terminal world; physically, digitally, discursively.

(Fig.10) Relational Circuit by Paul Ryan, revised drawing for Documenta 13.
Source: Berrios-Negrón.

The motivation to study and test Peirce’s work in this manner comes from collaborating with Paul Ryan and his partner, urban ecologist Jean Gardner. Ryan and Gardner worked together with intense commit-
ment, from the 1980's until Ryan’s passing in 2013. They each, in their respective practices, looked to reproduce notational and performative – rather than representational or imaginary – forms of communication to remediate our relations with natural ecosystems. Ryan, with later contributions by Gardner, initiated Earthscore (1972) as an experimental art methodology, as what we may call today ‘artistic research’. From Earthscore, Paul formed the topological model called the relational circuit in order to ‘place’ the ensuing performative technique of Threeing (1976), all working from within the premises of Peircean thought; specifically from a category of inference Peirce called ‘abduction’, and from the categorical triptych of firstness, secondness, and thirdness. Through Earthscore, Paul found that the ‘intransitive’ potential of art is rooted in those Peircean phenomenologies of the categorical triptych for semiotic inference. For Ryan, and for Gardner thereafter, practicing Earthscore helps us understand, ‘beyond language’, our position on the living continuum explained by a triad of the self in contrast to two other positions that offer multiple perspectives without going outside the bounds of the continuum itself. They argue that this non-hierarchic way of making choices is ‘a sign of itself’ and therefore it is at the core of making and perceiving life (through art) and its plural multidimensionality. This is not a dialectical opposition that objectifies and externalizes nature – it is a topological semiotic of position for rethinking life within nature from a heterarchy of perspectives.13

This heterarchy of perspectives is of great importance to me; primarily, because of the early commitment Ryan and Gardner showed towards research and experimentation for art and ecology. Also, because the triadic and positional modes of topology and of ecology that Ryan conceived of – well before the Three Ecologies of Félix Guattari, and in contrast to Bateson’s directional mode of cybernetics – challenge the anthropocentric assumptions about Euclidean spatial perception, and even of positivist objectivity. More importantly, the topology was set forth precisely to unravel the putrescent physical and philosophical

13 In the essay “Video as Evolutionary Tool” (1976), Ryan describes how the Earthscore notational system is developed through experimentation with video art since the late 1960s, leading him to claim that it ‘would allow us to deal with our current ecological crisis in terms of a heterarchical system of shared perceptions rather than through blind faith in a set of ultimate propositions that we know, since Gödel, can in no way be ultimate [or terminal].’ ibid. Ryan 1992, 92.
binary of interiority | exteriority. That is why I implement the principles of Earthscore through my life-practice, because I deem it to be, in no small measure, a method in which I can challenge the dissociative and depersonalised toxicity of our still-entrenched binary frameworks. And therefore, it is what, in this case, leads me to hold and depose the enforced and illusory discourses that the ‘greenhouse’ technology has been tacitly inducing for about two thousand years.

There is no doubt that dialectical modes of discursive opposition have had critical and productive roles in predicting and resisting the toxic ideological forces of modern dissociation and colonial injustice. But it has become painfully evident that the effect of oppositional ambiguity by way of dialectics has been indiscriminately instrumentalised by those who abuse technoscientific logic to deliver demoralizing losses to our collective memory and imagination. Artist and research pedagogue György Kepes referred to this broadening loss, to such decay as the crisis of scale facing modern societies [see c.(F)]. This crisis manifests as the inability to perceive, evaluate, and embody the temporal and dimen-
sional proportions that make living possible. Such decay does not lead to diverse differentiations, but to reductionist oppositions and impasses between the object as ‘absolute’, and the relational as ‘divinity’. The resulting oppositional entropy does nothing but reinforce and mystify our destining towards Global Warming while stagnating the potential of hetarchies for differentiation. Our decaying inability to differentiate the crisis of commoditized, free-market speculation from the fearless contestation of the natural messiness that is indeterminacy, even in the face of the false and the unknown, is precisely what research through art and science ought rethink, and confound.

With that, let me tell you a bit about the editorial mood of this book. As printed matter – beyond the references the installation and the online journal may provide – the book is, again, inevitably ordered by these words and by the binding of these pages. But I challenge that linearity (of the order, or disorder, of the convolutes) so to reflect my appreciation of Aby Warburg’s Atlas Mnemosyne (1929/2010), as well as in reference to my childhood readings of El Milagro Secreto (1944) of Jorge Luis Borges, and of Julio Cortazar’s Hopscotch (1963), all informally resorted to as literary structures that lean on paradox and challenge chronology.

I am also influenced, not in practice, but by the narrative methods projected by Myriam Lefkowitz’s artwork (and adaptable perceptual mode) titled Walk Hands Eyes (2010-present), as well as by Janet Cardiff’s Alter Bahnhof Video Walk (2012), which play a tactile and memory-based affect through the physical acts of walking-as-perception. You and I of course do this metaphorically, as a psychogeography that does not necessarily occur in a chronological order (see EXPOSÉ). What our non-linear stroll offers instead is a method for marginal perception and critical reflexion. It is an approach I first tested in a short essay about the sense of smell for the art book The Hard and the Fast by artist Rick Buckley.¹⁴ And now I will attempt to expand on that narrative-method with the hope that it narrows down the ‘who’ and the ‘we’ on our walk, and to help stage the ‘what’, ‘where’ and ‘when’ I’d like to share with you.

That does not mean that the book is a random stream of consciousness to be read in an aleatory manner. What I present instead is a sprawling, reticulating array of ‘convolutes’ composed of texts, terms, and images, collected and recollected before and during the doctoral period. For this reason, there is no more important precedent to the book, and to the work as whole, in form and in content, than Walter Benjamin’s *Arcades Project* (1927-40/1982 Suhrkamp /1999 Harvard).

When reading the English-US edition of the *Arcades* in 2002, I immediately sensed that this thing was not really a ‘book’ but a handheld archive of loosely associated, and even deliberately dissociated, materials. Again, posthumously, Adorno referred to the mounds of materials Benjamin had accumulated and loosely classified as ‘convolutes’, all reading together very much as an interrupted and iterative montage. Over the years, I am still, slowly, learning how Benjamin reflected the entire scope of his critical research unto, and ‘through’ the Parisian arcade as a vast object of historical and technological analysis. It became his *Passagen-Werk*… his work of passages, and perhaps his right of passage (*dando camino*, giving way) … something he and Franz Hessel originally conceived of in 1927. Thereafter, as World War II took hold, he had to carry on bravely, working it alone over the ensuing decade. Already by 1930, in a letter to Gerhard Scholem, Benjamin deemed the *Arcades* to be ‘the theatre of all my struggles and all my ideas.’\(^{15}\) It had become for him – as it perhaps becomes for us – a cultural, spatial, and environmental laboratory. That was all tragically interrupted in 1940 when his lonely and desperate seven-year exile from persecution came to an end with his apparent suicide at the French-Spanish border (an end still in dispute).

Reactivating that ‘theatre-laboratory’ is my attitude. I’d like to reinstate the messy convolute as a way to talk to myself, so that you may ‘see’ my thinking as we walk; as one of the key methods I employ for intersecting the research, experimentations, and reflexions. Their entwinement helps me deliberate that which I have been encountering on my own marginal paths, to bring you along on that happenstance of intersections. It is the convolute, as literary method of indirection [see c.(G).] with

which I actively test, chronicle, and reflect-upon the marginal readings of ‘greenhouse’. It is also an intransitive form [see c.(C)₆] that allows for the contrast between the ‘greenhouse’ installations and the genealogy of ‘greenhouse’ to register as predecessors and successors to the ‘arcade’ and to the Arcades... as interchangeable prop, medium, and preparation. From them, you and I may then complement the work of Benjamin (among others) as a form of iterative and artistic inquiry. That is how we may indirectly display and perceive the intransitive margins, languages, and perspectives that may make-visible the violent forces that drive our climate emergency. I attempt to enact this complementary continuation as an expanded questioning of ‘greenhouse’, as archetype to the Arcades, and as a revision of superstructure that turns into a more prescient, haunting parastructure [see c.(B)₅] offering multiple displays to perceive our struggles and our ideas.

So as we walk on the landscape of that vast and reactivated ‘theatre’, I aim to stay with the troubles, as Donna Haraway would say. Through its interchangeable triadic form as prop, medium, and preparation, we can better gravitate towards the open paths and multiple margins from the shoulders of artists Claire Pentecost, Paul Ryan, Muntadas, Joan Jonas, Krzysztof Wodiczko, Coco Fusco, Patrizia Bach, Mark Dion, Mark Leckey, Kader Attia, and Florian Dombois. We do this in order to also stand on the shoulders of theorists, philosophers, translators, epistemologists, and ecologists Jean Gardner, Susan Buck-Morss, Peter Melville, Esther Peeren, María del Pilar Blanco, Rebecca Comay, Zöe Sofia, Juan Herreros, Marisol de la Cadena, Lauren Berlant, Katherine Richardson, Jonatan Crary, Mary Tiles, Brigette Baptiste, Fernando Ortíz, Boaventura de Sousa Santos, Luciana Parisi, Ricardo Kohn, Hans-Jörg Rheinberger, Howard Eiland, Susan Star and Bernard Stiegler. We stand on their shoulders and try see through their minds the drawing-gravities that continue to make the landmark works of Charles Saunders Peirce, Gaston Bachelard, Walter Benjamin, Martin Heidegger, György Kepes, Lina Bo Bardi, Rosalind Krauss, Gregory Bateson, Jacques Derrida, and indeed Donna Haraway relevant and perceptible, giving life to the effort that grows here before you.

Their perspectives are what allow me to activate the theatre-laboratory of ‘greenhouse’. They are what gives the thrust to decolonise that which
has emerged as most prevalent...the role of technical memory in relation to the colonial drives of Global Warming. This became painfully evident on the 6th and moreover on the 21st of September of 2017, right as I was in the midst of my doctoral process, when my home island of Puerto Rico was hit, within two weeks, by two Category 5 hurricanes (Irma and María). The fear of not knowing how my family was fairing, and the pain and suffering this doppelgänger cataclysm unleashed on millions of Puerto Ricans, as well as on millions of other islanders of the Caribbean, has had a heavy impact on me, and on the tone of the PhD.

That twin event – along with my ensuing research travel to the island soon after the hurricanes – made me further re-evaluate our emotional, historical, and environmental constitution as still-colonised subject. With those perspectives, materials, and encounters, I felt prodded to project-forth how the acceleration of climate change is the re-living of the trauma...of the cataclysm that is the modern imperial project, over and over, still-manifesting in the enforced guise of acute consumerism and terminal capitalism. The hurricanes that hit Puerto Rico have only reaffirmed my conviction to realise this PhD – for my daughter, for my family, for the public, for my colleagues – to present my work as artist, researcher, and technologist, and to reflect the urgency of addressing such self-destructive violence.

And, that is why I find colonial memory to be the key contradiction, the void, the core of the cut of ‘greenhouse’. It is the very physical spectre that divides our illusions from reality, dividing and devising the seemingly messianic march towards Global Warming.

All in all, the encounters you and I may here perceive could begin to unravel the duplicitous functions of ‘greenhouse’, yielding instead:
1) a still-prescient anarchive releasing the violent super-repression of colonial memory that paradoxically drives the conservation of toxic values in natural science and natural history;

2) an inverted perception of the socio-economic ‘superstructure’ that may become a spectral metaphor beyond outdated speculative and industrial models for agriculture;

and 3) a social pedestal that begins to decolonise the ‘greenhouse’ technology... allowing it to become a proportionate and transitional model for multi-species perspectives; a format of display for remediating associative arrays of spatial practice away from the strangely messianic prophesy of Global Warming.

The experimental process of conceptual, sculptural, and perceptual action – one that only the methodologies of art can reproduce – is here implemented to challenge the standardised assumptions about what the manifold of ‘greenhouse’ is; how its messianic promise exacerbates accelerated climate change; and thusly, how – if effectively deposed – it may present marginal and alternative remediations to the ruptures dividing life away from environment.
Topology

A surface being cut up into $\&$ regions,
or faces (K)
or a simple discoid character
by simple lines with nodes always between or at ends of
Nodes only occurring at the ends of
the boundaries - bounds, and always there, always
Bounds only between (or at all ends of ?) regions and always there.
But there may be two bounds or more between same two regions.
If you omit a bound you omit a region
If you omit a node you omit a region
you can suppress a node by suppressing a bound.
(Figs. 12 & 13) Scan of one of Charles Sanders Peirce’s journals titled ‘Topology; Real Curves; Astronomy; Archeology; Assorted Mathematical Notes’ (left) Source: University of Indiana’s Arisbe: The Peirce Gateway project, Public Domain; and (above) Walter Benjamin’s set of bookmarks, inscribed with the legend of coloured symbols for cross-referencing the passages on Baudelaire and the accumulating materials for Das Passagen-Werk (Mit Bindestrich und Werk mit Capital W). Source: Courtesy of Patrizia Bach from her research work at the Walter Benjamin Archiv, Akademie der Künste Berlin [see c.(G)].
LIST OF SELECTED ARTWORKS
prior and during doctoral studies
2006 - 2016
Dispositivos e infraestructuras de apoyo
pruebas y prototipos para el Pedestal Social
Tortugas, Mesas-Y, Archivo Durmiente, Arqueologías Inmediatas, Tapices para Threeing y Alfombras Voladoras.

... 

Infrastructures for support & display
tests and prototypes for the Social Pedestal
Turtles, Y-Tables, Sleeping Archive, Immediate Archaeologies, Threeing Rugs, and Flying Carpets.
Turtles are a series of mobile curatorial infrastructures (2005-14). They primarily provide a space and a system of modular, ergonomic storage units, transported by larger mobile modules. When all modules stand side by side they create larger spatial configurations. They are often made of wood variations, such as harvested Baltic birch plywood, recycled wood chip panels (OSB) and recycled particle board (MDF), along with steel components.

The storage box module, that continues to be part of the different Turtle versions, is identical in size (30x40x50cm) but with variations of open faces. It is designed to serve its users as performative display supports and pedestals... ie. steps, chairs, tables, bars, shelves, stairs, walls, etc. The larger wheeled module mobilises the box system. It also serves itself as a space-making device and it functions as such whether

![Turtle Two (module 4, 2009) at the Future Archive in NBK, Berlin 2012.](image_url)
full or empty. It can become a complimentary surface backdrop for presentations, shelving, pin-up surface, stage-set, audiovisual service space, cat-walk, DJ booth, A/V rack, projection surface, fence, etc.

In contrast to most scenographic techniques, Turtles leave no waste. For example, the Turtle Two has had an after-life, temporarily and permanently, in exhibitions and institutions such as the Future Archive (curated by Ute Meta Bauer), Deutsche Architektur Zentrum, Program, District (curated by Susa Husse), Maker Lab, and for The Imaginarium (curated by Lukas Feireiss, Tomorrow’s Thoughts Today, and Adrienne Goehler), Huttenpalast, and Open Design City (Betahaus), all alternative cultural centres in Berlin.

The Turtle concept offers modular capabilities for events as discursive infrastructure, often blurring the boundaries between authors, users, and general public. The Turtles also aim to project a relationship to the urban landscape, from brick to building, a scaled, customisable abstraction of the city. Not unlike a hip-locampus, the experiences enacted through their use are encoded into the system; memory to further understand how other versions of the unit can illustrate past environments as they then inhabit future events.

The Turtle series include the Turtle (for MIT, 2005), Turtle Three (for ETSY Berlin, 2010), Turtle Kompakt (for Examples to Follow!, 2010-13), Turtle Five (for Aedes Metropolitan Laboratory, 2012), and Turtle Six (for the Hybrid Platform, Universität der Künste / Technische Universität Berlin, 2014).
Turtle Kompakt 185x210x110cm, birch multiplex and steel, for The Imaginarium, commissioned as travelling version of the original for travelling exhibition “Examples to Follow! Expeditions in Aesthetics and Sustainability” curated by Adrienne Göehler, 2011. Source: Göehler and Bauhaus Stiftung Dessau.
Threeing Rugs and Threeing Pavilion commissioned by Documenta 13, in collaboration with Paul Ryan. Rugs at 2800mm diameter, hand twined and weaved alpaca wool in Perú 2011-12. Pavilion at 1110x740x420cm, mixed media, Kassel DE 2012.

Threeing Rugs are tapestries, props, and pedestals for a performative practice called Threeing. Their geometry is both triangular and circular, utilising colour and pattern to suggest movements and positions for the practice. The video artist and semiotician behind the practice is Paul Ryan (1943-2013). Co-founder of the Raindance collective and their journal Radical Software, Ryan aggressively explored the problem of impasse in human relations, between ourselves and particularly our fractured relationship to nature. To address this, he produced a wide-reaching body of work of video, writing, and performance. The latter became Threeing which he described as “a three person solution to relational confusion. At the core of this solution is a voluntary practice in which three people take turns playing three different roles; initiator, respondent and mediator. Through this role playing, a clarity about relationships emerges, and an ease. This clarity and ease can be cultivated by practice and developed into healthy sustainable relationships.”

Stemming from making various schemes as floor patterns for the practice, the idea of a series of Threeing Rugs was originally explored by Ryan in the 1970’s along with various artists. But it was not until 2012, when Ryan was commissioned to participate in Documenta13 that the Rugs came to fruition. To do so Ryan invited me to be his core collaborator to produce the Threeing space and its props for the exhibition. Paul and I worked together on the layout of the entire space and objects, including the Rugs. I ultimately designed and produced the Threeing Rugs in the area of the Mantaro Valley in Perú with a family of traditional weavers, working through the entire 3 month process, from the threading of the alpaca wool and colour dying, to the weaving process. The Threeing Rugs ultimately became a displayed artwork, a partition between practice spaces in the Documenta13 Threeing shed (vertically), a prop for the act and display of the practice (horizontally), and a haptic object for comfort and shelter (sitting and covering).
Y-Tables are a series of unfinished support structures by the Anxious Prop collective (founded in 2009, named in reference to Rosenberg’s Anxious Object published in 1964). In principle, the Y-Tables are an applicable concept for customizable display and work stations, produced on-demand by the collective for selected interventions and commissions. They help create and contest questions among its users, as way to display forms of knowledge. As a sustainable approach, it is a customizable idea that facilitates specific production processes while keeping material excess to a minimum. The Y-Table always keeps its distinctive three-partite form, but its dimensions, surface-features, and programming vary from use to use, from site to site. It was originally conceived by the Anxious Prop for its “Case 3: The Black Swan Issue” at Salon Populaire, Berlin in 2010.

In Case 3, we looked to review the dialectic of the natural and the political on the one hand, and the esoteric and scientific on the other. We resorted to an intuition about collectivity. We set forth influenced by early Soviet theatre, more specifically revisiting Vsevolod Meyerhold’s biometrics and Lyubov Popova’s scenography for The Magnanimous Cuckold.

With that scenographic backdrop, we took the Black Swan as model for improbability, focusing on its inverse: low impact, high probability events. But in order to do so, we opted to engage a formal method of discourse within the collective, and later with the audience. Taking stock from Paul Ryan’s seminal videos, we reviewed his relational technique of “Threeing,” the performative dynamic for resolving dyadic confrontations in human relationships based on triadic interactions. With Threeing, the main players of Case 3 - Elín Hansdóttir, Mendel Heit, Fotini Lazaridou-Hatzigoga, and I - maintained continuous dialogue, a process that not only informed the decision-making behind the physicalisation of the Y-Table, but was also projected onto the space and the audience at Salon Populaire. Ever since, the Y-Table has been reproduced for other sites, institutions, and interventions such as the Maker Lab at the Milan Public Design Festival, as permanent event and display infrastructure for the Deutsche Architektur Zentrum (DAZ), and for the São Paulo Architecture Biennial. Each of these Y-Tables occurred by way of collaborations with its related groups such as Salon Populaire, Open Design City, Raumtaktik (Matthias Böttger), ZK/U, and Wasteland Twinnings.
Y-Table for “Case 3: The Black Swan Issue” at Salon Populaire Berlin 2010.
Source photo: Fotini Lazaridou Hazigoga.
Collaborating with art collective Gruna to produce the Y-Table from recovered ‘maçaranduba’ lumber from the floor demolition of an older wing of the Museu de Arte Moderna da Bahia (below left, 2013). Source photo: Patricia Almeida & MAM-BA.
Y-Table on display-use at a conference organised by museum director Marcelo Rezende of Lina Bo Bardi’s Museu de Arte Moderna da Bahia (left, piece acquired by MAM-BA on 2014). Y-Table produced at the museum, as part of the X São Paulo Biennial of Architecture, Brasil 2013 (workshop view below right). Source photo: Patricia Almeida & MAM-BA.
Breathtaking Greenhouse Parastrucures
Immediate Archæologies IV (vol.1) was process exhibition at Kunsthalle Lothringer 13, Munich in 2015. The show included flying carpet models, prototypes, collages and a 16mm film from wind tunnel tests. These carpets were weaved and prototyped in Jordan and Peru, then later tested in the Size Matters Windtunnel at the Zürcher Hochschule der Künste in Zurich Switzerland in 2010. These tests resulted from a 3-month art residency at the Size Matters program as per the invitation of its director, Florian Dombois. The collages are from the 28 de diciembre 2007 series produced during the following weeks of the title’s date. The collages are composed of newspaper cuttings from various local and international publications about the last days of Benazir Bhutto’s life and are set on a selection of Felix Gonzalez-Torres’ posters I collected over the years.

As per the program of Lothringer 13 . . .

“. . . Berrios-Negrón links folklore to high-tech, thus taking loaded topics from his interpretation into the naive. The West’s monopoly on scientific progress, and simultaneously its power of definition of technology and research, become reversed into mutual exertion of influence and stimulation. Diverging notions of merit and value, different perceptions of exclusivity and handcraft, and a Western claim on sobriety undergo new perspectives. Berrios-Negrón poses the central question: how much we need to see in order to believe it. A question, which not only is relevant to science, but moreover symptomatic in regard to a conflict between the unknown and the familiar.”
Testing 1:3 Scale Models of Flying Carpets at Size Matters Windtunnel, ZHdK 2013 (CH, above), exhibition view at Lothringer 13, Munich 2015 (DE, below).
Source photos: Berrios-Negrón.
Sleeping Archive (prototype) 280x140x140cm, recovered wood, fabric, steel, University of Copenhagen 2013.

(Above) ‘Discovery of America’, pen and brown ink, depiction of Amerigo Vespucci arriving on the Caribbean and giving his name to ‘America’ the woman on the hammock, by Jan van der Straet (Stradanus) ca. 1587–89. (Below) Test module of the Sleeping Archive on site at the University of Copenhagen humanities campus, and (right) rendered montage of installation, 2013. Source photo and rendering: Miguel Prados.
Sleeping Archive is the prototype of an unfinished, commissioned installation for the main building of the new Humanities campus of the University of Copenhagen. Extending from the Archive Building Workshop (part of Berrios-Negrón’s program for his Danish International Visiting Artist residency), this work relates to Bernard Stiegler’s rigorous problem of individuation and memory. Stiegler looks at how the ubiquity of memory prosthetics, as hypomnēmata, seem to alter our abilities to build memory, to retain and to retrieve it. He argues that these prosthetic devices, as forms of digital memory, diffuse the once-inseparable aspects of psyche, the self, and the social (collective) creating unforeseen consequences to understanding the present and its technical historicity. In this sense, the Sleeping Archive is situated in public space as a sculptural object with a variety of possible readings – about resistance, memory, and recovery. It is composed of recovered steel, wood, and curtain fabrics appropriated from the University of Copenhagen’s demolished campus buildings. These materials allow to make and suspend its central component, a hammock, between steel triangular prisms. This relates the first ‘image’ of the hammock, as colonised technology of the Spanish arrival to the Caribbean, captured in the late 15th century, as a worthy indigenous technology. With that, when installed, it sets forth a future of a slight resistance; where sleep and rest are not only memory-building activities, but also sleep and rest as counter-cultural manifests against neo-liberal labour and knowledge production modalities. It physically and materially, as an archival device, reminds a present colonial memory that is not to be forgotten to the forces instilled by neo-colonial, consumerist ideologies.
Specularia*

Nósferas y otras Paraestructuras Ambientales
...
Nonspheres, and other Site-Specific Greenhouse Parastructures
* El invernadero es una tecnología cotidiana y encubierta que lentamente cubre nuestros paisajes de cultivo y que sella nuestros ambientes habitables. Tácitamente se asume que esta tecnología se manifiesta como un objeto que discretamente condiciona la producción cultural, no menos desde la construcción del Palacio de Cristal para la Gran Exposición del 1851. Pero los inicios de esta (proto-)tecnología agrícola se extienden dos mil años. Alrededor al año 30 EC encontramos rastros de lo que se considera haber sido el primer invernadero: un jardín medicinal cubierto por un techo de lascas de piedra mica. Fue encomendado por el emperador romano Tiberius como un ‘specularium’ para su villa imperial Jovis en Capri; en él se crecían principalmente pepinillos, y otras verduras y frutas frescas, recetadas médicamente para ser consumidas a través de todo el año. Dicha prototecnología del invernadero es ahora nuestro campo de gravedad para deponer el supuesto destino del calentamiento global.

* Greenhouses have become a ubiquitous, camouflaged technology that is slowly covering our arable landscapes and permeating our habitable atmospheres. We tend to assume the role of this technology as a discreetly present object of cultural production, namely since the erection of Crystal Palace for the Great Exhibition of 1851. But the beginnings of this agricultural (proto)technology extends two thousand years into the past. Around 30 CE we find traces of what is considered to be the first example of a greenhouse: a year-round medicinal garden covered by a roof of mica-stone tiles. It was commissioned by Roman emperor Tiberius to be (somewhat ironically) a “specularium” for his imperial Villa Jovis on Capri; it was a place to grow fresh, medically prescribed cucumbers and other fresh vegetables and fruits to be consumed year-round. Such prototechnology is now our field of gravity to depose the destiny of Global Warming.
Nonsphere IV mixed media, dimensions variable, installation and closed circuit video, commissioned by Program, Berlin / Center for Contemporary Art of Afghanistan, Kabul, curated by Carson Chan & Fotini Lazaridou Hazigoga (Berlin), and Rahraw Omarzad (Kabul) 2006-07.

Nonsphere series stems from what geochemist Vladimir Vernadsky called for as a new phase in biospheric dynamics – the noösphere, or sphere of intelligence. Vernadsky marked this change with a new era in geologic time, the Psychozoic Era, in which humanity as a whole is a powerful geological entity, moving more mass upon the earth than the biosphere. *Nonsphere IV* took the built shape of a parametrically generated lattice. This simulation of a carbon tetrahedral, molecular lattice fills the 3D mapping of the entire gallery, suggesting a continuous yet remote set of relationships intended to incite what Freud calls oceanic feelings, or the infantile sensation of boundlessness between the ego and the outside world. This sensation is further induced through video work talking place on two other geopolitically charged offsite locations - Teufelsberg, Berlin and Bibi Mahro, Kabul. The video is a juxtaposition of filmed material of the abandoned NATO secret communications facility in West Berlin, along with documentation of a public art workshop that I conducted with students of art and architecture in Kabul. Becoming entwined through these two videos, the gallery and audience found itself at once engaged in a transposed, lateral, and endless greenhouse... a post-Cold War world of imaginary spacetime.
Photos of action during and installation of Verde que te QuieroVerde with students and Rahraw Omarzad in Kabul. Source photos: Massoud Hosseini.
LIST OF ARTWORKS...
Immediate Archeologies Two ca. 2500qm, mixed media, commissioned and curated by Lukas Feireiss, Dresden 2009.
Immediate Archaeologies Two (or The Children's Crusade) was about triggering a buoyant psychogeography of this abandoned slaughterhouse, former war prison in Dresden. It is an additive excavation that searches to re-enact the mindscape of time-warped Trafalmadore, the mythical planet, or haven, constructed years before by Kurt Vonnegut’s experience as prisoner of war and ensuing Slaughterhouse Five science fiction novel. This time, the processes took the shape of a “potential” greenhouse, a boundary object questioning the subject between history and knowledge, fact and truth, to temporally fabricate a theatre to activate what was a static past into a noöspheric future.
In the Living Archive Course we review the future of archiving natural history by defining the ‘greenhouse’ in the context of climate crisis. With the participation of Miguel Prados Sánchez (Paramodular), and with invited reviewers curator Eva Wilson, and artist Ion Sørvin (N55), we explored how the individual and collective definitions of archive, institutional memory, site-specificity, and material economies regard to global warming and climate induced migration. Reviewing these definitions served as probes to consider and give alternative notions of how these conditions (social, atmospheric, and geographic) are changing the ways we see and build cultural and spatial production. In order to mediate these complex issues we consider and develop an architectural archetype - the greenhouse - as a loose term, as a ready-made and boundary object about archival spaces and future landscapes. The final greenhouse built collectively with the students measured 24.7m² and remains as a permanent installation in the campus’ wetland and garden of the nutritional sciences department of the University.
View of installation process with students (left & above). Source photos: Miguel Prados. (Below right) frontispiece of the catalogue of contents of the Musei Wormiani of Danish natural historian Ole Worm. It is often used as example of a ‘Raritetskabinet’ or ‘Wunderkammer’, a collection of ephemera representing as man’s domain of the world, 1655. Source: Public Domain.
Collapsed Greenhouse is the display scenography for the public scenarios and transformative practices of Undisciplinary Learning. As an anticipatory spatial ecology, it is part of his Nonsphere series, in which he engages artistically and theoretically with contemporary environmental forms, collective experience and triadic formats of thought and production. The Collapsed Greenhouse is based on the critical exploration into the manifold idea of “greenhouse”, how it embodies the history of colonialism and its present advance in geopolitics and accelerated climate change. Appropriating their glassy figure and materiality, it destabilises the growing, problematic ubiquity of industrial greenhouses (so called “greenhouse superstructures”) and reminds their role as translucent, quasi-temporary spectres from a future that comes to haunt us in the present. Striving to emancipate the greenhouse from the limited, dialectical instrumentalisation as industrial technology, the Collapsed Greenhouse challenges the toxic divisions between interior and exterior, human and nature, subject and object. Acting as a critical neighbour and site-specific form of resistance to “clean tech farms” that commercialise “food security” and health in lieu of climate change, this environment hosts an entirely different relationality and potentiality. This spatial potentiality is drawn from Berrios-Negrón’s work with the Anxious Prop collective on the constructivist scenography of Lyubov Popova for Meyerhold’s Magnanimous Cuckold (1922) in 2010. The mobile apparatus of the Collapsed Greenhouse takes inspiration from these transgressions of the limited frame of institutionalised cultural space and forwards the integration of public and collective. As a “social pedestal” the Collapsed Greenhouse displays collective experience as a political figure (Text by Suza Husse, 2016).
Looming Greenhouse was a temporary installation for the Art Biennial of Bahia of 2014 potentiates the roof surface of Salvador’s Castro Alves National Theater (opposite). Here, the act to potentiate is in itself an index. These visibilities are articulated by the use of three infrastructures: a pyramid, a warp, a stage. In time, their collective use energizes and nurtures the realisation of a green roof that was officially planned by and for the Theatre, but currently paralyzed for lack of funding. With this, the Looming Greenhouse looks to 4th dimensional form, not necessarily as social sculpture, but more so a social pedestal, taking the unimaginable form of an abstract machine that makes-visible the pervasive fading of public space. This elusive visibility is then transformed by the nonobjective act: being before it, just to confuse it with something else through the visual modality of misrecognition (Hopf, 2010). The misrecognition of the roof surface of the Teatro Castro Alves is to be a placeholder facilitated by the support structure (appropriated scaffolding as ready-made from the Carnaval bleacher, or “arquibancada”) as an absence that encourages the memory of the precarity of public space. This precarity is one which Salvador is not exempt from, often through the obvious fencing-off and erasure of green spaces for real estate speculation and development [such as public parks and even religious, medicinal gardens (Terreiros of Candomblé, see next page), de Silva/Sereno, 2010], but further exemplified by the recent unabated and controversial commercialisation of the Carnaval itself, being used as an aggressive instrument of both branding and segregation.
“To potentiate” social doings, Berríos-Negrón torqued, sectioned pyramid will point beyond itself. Thus, it is an index. To what actions does it point? I interpret it here as deploying the antropofagic impulses of the Brazilian avant-garde (perhaps generationally performing an anthropophagy of antropofagia itself). The point is to inhabit certain European geometries – the rational stepped structures of the Enlightenment (think of Ledoux’s “Maison des Gardes Agricoles”), only to undo them. In part, this necessary undoing is done through the indexical – pointing away – but unlike Peirce’s index, it doesn’t indicate a past event but a future set of potentials.” - excerpt from The Greenhouse Chronotope, by Caroline A. Jones, published in the exhibition catalogue for Tear do Terreiro / Looming Greenhouse, 2014.
Installation views of ‘loom’ (above), and Ndiakalunga with one of the installation’s curators Daniel Sabôia (left). Video capture of Babalorixá Tatá Muta Imê’s daughter and son of the Terreiro dos Olhos do Tempo da Nação Angolão Paquetan (below), giving way to the Looming Greenhouse during the 3rd Biennial of Art of Bahia on the roof of the Castro Alves National Theater, Salvador da Bahia 2014.
Earthscore Specularium was the experimental work that served as departure point to the doctoral research of Breathtaking Greenhouse Parastrucures. It was installed at Färgfabriken and served as exhibition scenography as well as our home from 23 Sept. – 29 Oct. The installation treated the idea of a Specularium as a loose spectre, to be partly emitted through the practice of Earthscore: a notational system initiated by the late video artist and semiotician Paul Ryan. Through the research-work I, along with my partner María Kamilla Larsen, and our daughter Freia Pilar, intended to experiment with alternative, multidimensional forms of display. This act of displaying was considered to activate objective and non-objective sensations about what it would be to live in the context of climate crisis, taking the greenhouse as its assumed apparatus. Considering that we were ourselves objects of observation and of display, we considered, along with over twenty guest-roommates, to think of the greenhouse as index, hyperobject, preparation, abstract machine, anxious prop, and, ultimately, as social pedestal. As a working model of a greenhouse superstructure, the installation was about amplifying the spectral sensations and discourses about the technology’s impact on colonial memory, the future of human habitation, as well as the future of natural history…

the following is a report extended report of the exhibition.

• • •
Freia Pilar at Earthscore Specularium, Färjestäviken 2015.
Source photo: David Fischer.
DESCRIPTION OF PROCEDURES RELATED TO EARTHSORE SPECULARIUM

The following report takes the form of this description, a series of correspondences (referred to as “addenda”), and selected images of materials and scenarios regarding Earthscore Specularium. The core of this artwork, as a practice-based research effort, was the shared accumulation of these aforementioned letters, along with a series of corresponding scarfs. Their accumulation is an epistolary and collective account that serves as notation and hypomnēmata, as a self-inscription and as an externalised array of memory about Earthscore Specularium: as a model of a greenhouse superstructure installed transversally in a museum, where my family and I lived in for three months. We collected and concatenated this array of memory for, and with, the institution, curator, collaborators, public visitors, but more importantly, with our guests that stayed one or two nights with us at the installation at Färgfabriken. This method led us to accumulate some sixty letters/correspondences along with over thirty ink-drawn scarfs. The written letters are the evidence of our communication, back and forth. The scarfs were evidence of our other shared communication, as another more entangled form of notation done by practicing Threering in its more primitive version (as opposed to its more complex performative and video production practices) of collective drawing practice - a practice invented by Paul Ryan, who also invented its related performative & video notation system Earthscore.

For your reference, Paul, who I collaborated with in Documenta13, described Earthscore as - “... a notational system similar to musical scoring. Just as conductors use classical music notation to orchestrate various musical instruments into a symphony, so Earthscore orchestrates different media into “symphonies of knowledge” that support living on Earth in sustainable ways. Earthscore also includes a formal approach to working collaboratively, a yoga of relationships called Threering.”

He describes Threering as - “a three person solution to relational confusion. At the core of this solution is a voluntary practice in which three people take turns playing three different roles; initiator, respondent and mediator. Through this role playing, a clarity about relationships emerges, and an ease. This clarity and ease
can be cultivated by practice and developed into healthy sustainable relationships.”

With Paul’s techniques we looked to confront the defunct, putrescent corpse of dialectical imagery, if to confront the basis of interiority and exteriority that seems so toxic to the modern conception of environment. The accumulated and ongoing internalisation and externalisation of these memories (that’s what is meant by multidimensional notation) materialises the interstice between inside and outside (a polemic that the future ghost of the translucent greenhouse membrane itself materialises), depending less on the visual or the digital, on mapping or directionality, and more on other sensations that traverse through language and image, delivering a shared collective experience about what accelerated climate change may be. This type of memory is, in no uncertain terms, the colonial matter of western definitions of nature itself that is nihilistically embedded within the envelop of the term ‘greenhouse’ itself. ‘Greenhouse’ as term is currently the primary vehicle of exploration for my works like Earthscore Specularium, as well as several others, such as the more recent “Collapsed Greenhouse” at Undisciplinary Learning in District Berlin (Sept. - Nov. 2016). They operate as preparations, or translucent, indexical objects for display, produced for conditioning unforeseen forms of knowledge and environment. These occur as well in other variations, as Turtles, Flying Carpets, and Y-Tables (as presented in the previous pages) all as a body of work, dedicated to nurturing the instantiation of social pedestals as an exploration into the display of dematerialised sculpture as environmental form.

For example, please see here the letters from the Specularium to curator Eva Wilson, to biologist and director of Bio Sciences at Jülich Forschungszentrum Ulrich Schurr, and to urban ecologist and Paul Ryan’s partner and urban ecologist Jean Gardner as sample-specimens of this methodology. You will find fotos of one of their corresponding ink-drawn scarves done by Threeing, but also a contact sheet of a selection of the scarves made by other guests. The final memory of the work will likely never be concluded as it might continue to accumulate, as archive and index, endless correspondences from all its participants, a processual item to be inserted to the doctoral process as an intersectional device across the dissertations’s outcome.
(This is addendum four, for public use, subject to change)

10 Juni 2015, Berlin

Dear FÄRGFABRIKEN,

Yesterday’s meeting with our collaborators has clarified most of the physical dimensions and general components.

Particularly, the discussions have strengthened the thought of what it ought to signify and display as our social pedestal, to think Paul’s Earthscore. This means that:

Physically, it will be a loose 1:3 scale model of the volume of the Färgfabriken building as a miniature replica of an industrial greenhouse superstructure.

Figuratively, it will be a specter. It will be an industrial specter of its self coming back to talk to us in present life.

Formally, it embodies a reorientation towards solar and environmental coordinates. These are non-local and site-specific, not in perspective nor in regards to its projection, but a representation of our modern, retinal dysfunctions.

The way it gets to occur is by now concentrating on its technical materiality, structural layout, and life. These are needs for the opening of the exhibition for these are the aspects that will provide its temporal resolution, and start the core interrogatives we aim to provoke.

The rest - the mint, the parsley, the rosemary, the cilantro, guayabas, the panches, the papayas, the plátanos, the hens, the dragons, the cocks, the tilapias, and niguares; the plantwalls; the stream, the mess, the beds, the loving details - will come soon and during installation.

[Redacted] we want to release any more information.

Earthscore Specularium is happening.

Thank you.

Freia, Maria, Luisa
(aka; [Redacted])
List of Guests and Schedule of Events

2-5th October - Jean Gardner (urban ecologist, New York)
*Public talk, 4th October, 2pm.*
Jean Gardner is an activist, writer, teacher, public speaker, and visionary on Design for a Living Earth. She is an Associate Professor of Social-Ecological History and Design at Parsons School for Design, and is life-partner of video artist and semiotician Paul Ryan. She organized, with the Baum Forum, the first conference in the United States on the relation between Water, Hydro-Fracking, our Food Supply and the Living Earth. Among numerous publications, Gardner wrote the first book on ‘Urban Wilderness’ titled ‘Nature in New York City’. Her current research focuses on design practice and pedagogy and their relationship to the creation of present ecological problems, such as climate change;

12-14th October - David Fischer (photographer, Berlin);

16-18th October - Ulrich Schurr (biologist, Jülich).
*Public talk, 18th October, 11.30 am.*
Prof. Dr. Ulrich Schurr is the director of the Institute of Bio and Geosciences-2 (IBG-2) at Forschungszentrum Jülich, the largest research centre in the EU. His research focus is on physiological concepts of plant-environment interaction, quantitative geometries and mapping of ecophysiology of lifeforms, and the screening of plants for altered physiological and anatomical phenotypes in high-throughput phenotyping facilities for growth and photosynthesis. He will give a lecture on his work specific to greenhouse superstructures and climate change;

19-20th October - Behzad Khosravi (artist, Tehran/Stockholm)
*Exhibition by Khosravi, Vernissage Tuesday 20th October;*

22-23rd October - Rick Buckley (artist, Berlin);

25-26th October - Katarina Bonnevier & Family (Stockholm).
*Fika with public, 25th October, 2pm;*
Dr. Katarina Bonnevier is an architect, artist and researcher. In her practice of building design, art installations, performances, work-shops, lecturing and writing she explores and transforms the built environ-
ment from feminist, queer and intersectional perspectives. Her dissertation is ‘Behind Straight Curtains: Towards a Queer Feminist Theory of Architecture’ about Eileen Gray (among others, KTH), and she along her family will share with us their ways of living in their communal farm and community space outside of Stockholm.

27-29th October - **Julie Harboe** (art historian, Zürich)
*Lunch session and open discussion 29th October, 12pm;*

29-30th October - **MFA Konstfack students**
*Evening stay-over for the course Instance, Notation, Sensation;*

31-1st November - **Maria Lantz** (artist/photographer, Stockholm).
*Short film Moon Bracelet and public talk 1st November, 3pm;*

2nd - 3rd November - **Hanna Husberg** (artist, Stockholm).
*Exhibition by Husberg, The World Indoors, ver. 3rd November;*

5-6th November - **Håkan Nilsson** (art historian, Stockholm);

7-8th November - **Hélène Frichot & Family** (architect, Stockholm).
*Public talk with Hélène Frichot and Jonathan Metzger 8th November, 2pm at the Earthscore Specularium;*

Hélène Frichot is an architect and theorist, and Jonathan Metzger is a theorist and urban planner, both professors at the school of architecture of KTH. They will share with us their most recent works respectively, and moderate a discussion thereafter.

9-11th November - **Florian Dombois** (artist, Zürich/Bern);
*Public talk Luis Berriós-Negrón and Florian Dombois in conversation 10th November, 5:30pm.*

Florian Dombois (B.1966 Berlin) is an artist who focuses on landforms, liabilities, seismic and tectonic activity, as well as on their various representational and media formats. He is professor and director of the transdisciplinarity programme at the ZHdK, and co-founder of the Journal for Artistic Research. Florian Dombois will exhibit a mobile as a comment to Earthscore Specularium during his visit.
11-12th November - **Gehard Eckel** (artist, Vienna/Stockholm);

*Film screening premiere Song from the Forest and Q&A, 13th November, 7pm.*
Michael Obert’s debut movie tells the story of American Louis Sarno who has lived among the Bayaka pygmies (also Aka people) in the central African rainforest for 25 years, and travels with his son, 13-years-old pygmy boy Samedi, to New York City. Song from the Forest was honored with the Award for Best Feature-Length Documentary at the International Documentary Film Festival Amsterdam 2013. Michael Obert is an award-winning writer and journalist.

16-17th November - **Maja Frögård** (designer/artist, Stockholm).
*Exhibition by Frögård, Vernissage with Maja Frögård 17th November at 5 to 7 pm at the Earthscore Specularium;*

17-19th November - **Noshe** (photographer, Berlin);

*Public presentation, Sunday 22nd November 2pm.*
Eva Wilson is a curator and writer based in Berlin, and Adam Gibbons is an artist based in London. During the weekend of November 21st and 22nd they will collect and discuss the world of ‘hyper’: (not limited to) hypercubes, hypercolor, hyperspace, and hyperstition;

24-26th November - **Michael Marten** (urbanist, Berlin) & Camila Preve (architect, Florianópolis);

27-29th November - **Adam Bergholm** & **Coco with their daughter Rita** (artists, Berlin/Stockholm).
*Screening by Bergholm, 26 November, 5 to 7 pm.*
Breathtaking Greenhouse "Parastrucures"
The preceding spread is the concept image for Earthscore Specularium. The image took the form of an all-weather polyethylene poster and was on display at the installation. Set over my long-gone tropical home of Puerto Rico, it is derived from Christopher Wool’s Untitled of 1991, later adapted by Félix González-Torres (as a collaboration with Wool created for Printed Matter at Dia Foundation in New York in 1993). The painting and poster are derived from the 1918 essay titled “The Apocalypse of Our Time” by the philosopher Vasily Rozanov with which he allegorised the upheaval of the Russian Revolution. The Situationist writer Raoul Vaneigem later adopted the passage, and now serves me, as Puerto Rican, as an allegory for this period of neocolonial advance, of accelerated climate change and forced migration. “The show is over. The audience get up to leave their seats. Time to collect their coats and go home. They turn around. No more coats and no more home.”
View of "farm" component of Earthscore Specularium from street at Färgfabriken, Stockholm 2015. Photo by David Fischer appearing in the cover of Tidskriften Rum magazine, issue 175, October 2016
View of “mess” component of Earthscore Specularium from main gallery at Färgfabriken, Stockholm 2015. Photo source: David Fischer.
Picture of one of two Threeing-ink-drawn scarfs (above) made in collaboration with Katarina Bonnevier and family (below left) during their stay at Earthscore Specularium, 2015. Source photos: Berrios-Negrón
View of “mess” component Earthscore Specularium. Source photo: Noshe.

Dia positive of all Threering ink scarves drawn with the guests.

Source photo: Berrios-Negrón.
Highlights of Correspondences with Guests

The Specularium is a new kind of habitation in a transforming habitat -- the climate-changed region of Stockholm -- where new habits (ways of living) are needed. I choose these three words carefully to describe my experience. They vividly explain in English how what we live in, where we live and how we live are variations on one indivisible dynamic, transforming reality.

Jean Gardner 13.oct.2015

I have traveled the world, from the Congo to the Antarctic, as climate and war correspondent for Die Ziet and Süddeutsche Zeitung, among others, and I have never been to a more remote place than Earthscore Specualrium. Thank you for creating this new understanding of the disconnect we will face as we relay more and more on greenhouses.


The cycle closes when humans use greenhouses to grow/produce plants - in the reduced environmental complexity and in conditions safeguarded by humans. Here, we could talk of a co-evolution of human knowledge, engineering and design to optimize plant production (in management) with the plant, which — during domestication — adapts itself to perform best under the artificial conditions of a greenhouse (or agricultural management), which — in this sense — is a non-visual boundary of a space generated by humans to host and produce plants. I feel you made this challenge palpable through your artistic perspective, and it is a valuable experience for me, to revisit these human life challenges again, but from a very different perspective.

Ulrich Schurr 25.april.2018
Maria making video of water flows on the aquaponic ‘stream’ with Jean Gardner (above), and Maria Threeing with Petra and Uli Schurr at Earthscore Specularium, 2015. Source photos: Berrios-Negrón.
(This is addendum fortyeighth of Earthscore Speculum, for public use, subject to change)

8 Nov 2015, Stockholm

Eva Wilson
Curator
c/o Adam Gibbons
London UK

Dear Eva,

We are very much looking fwd to seeing you and Adam.

As far as speaking dates… if you are flying out on Sunday evening, I suggest we have you speak then on Sunday 14:00 instead. We have been doing a kind of indoor picnic tea (Swedes call “fika”) that have been quite lovely. The turn out varies quite dramatically, between 8 and 50 people. But it is very nice regardless as it turns into quite a comfortable thing, like to day’s with Helene Frichot and Jonathan Metzler which was a super nice discussion with guests such as Elof Hellström from Cyklopen and Peter Lang from Mejlan. The fika with queer scientist and architect Katarina Bonnier and family of five a couple weeks ago was particularly wonderful.

As far as the Speculum, we have pretty much everything you need, including towels. The one item that we ask to bring are house-shoes.

Sleeping arrangement is that you and Adam will have your own sleeping module, which is quite small but intimate, like a monastic cell.

As far as daily routines… we do not open the doors to the public unless we are comfortable doing so. The matter of being on display, particularly as a social pedestal, only takes place when activated by us, not by the institution, meaning that we do not operate on the opening hours… that said, we do often open usually after 12:00 noon when we usually feel good and ready and Freia is up from her first nap. And, we do so because there are always a few people who are eager to come in, and we try not to be too despondent.

So, you can totally think through the momentary, domestic situation and perhaps give that an alternative dimension. Again, we are in a virtual machine that we think you of all people will appreciate, and we do not hinder any actions from our guests as long as they are not traumatic to us, Freia, nor to any of our non-human companions.

As far as all the equipment you mention for your performance HyperHyperHyper, all is available here, without exception, so just give Carla a heads-up on what you think you will be needing to prepare.

OK.

With Loving Regards, Yours,

Freia, Maria, Luis (aka. Neko, and Family)
Threeing ink drawing on silk by Earthscore Specularium guests, curator Eva Wilson and artist Adam Gibbons with Maria Kamilla, 2015. Letter to Eva and Adam (left).
9 October 2015, Stockholm

Prof. Jean Gardner
Urban Ecologist

Dear Jean,

It has been almost a week since you left to return to New York... but your spirit is still here very present, along with Paul’s, of course.

Just such a pleasure to have you stayed with us. As expected, we have had so many transformative conversations...

The first that comes to mind is the clarification about the photo of Paul in the boat which we are embarrassed to see that in the furthest of ES there are a couple of mistakes, about the time and location of Paul’s passing, which we will correct in the next edition about to sail with his crew to drop and lay the “pearl necklace” across the bottom of the Atlantic, from South Carolina to the Gibraltar. Somehow your description hit so hard that we felt as if we were on the boat too, dropping stones off board, eating dinners with fine china, upon the hard swaying of the seas, a chandelier swaying back and forth, bustling the nausea of seasickness with the delight of a fine chablis.

Another is how much Paul’s Earthscore has been part of your processes and how his, and you own scholarship of Charles Peirce has also manifested independently in your processes, in Cinematics and more so importantly in studying Geometries of Life. These approaches seem to vastly expand Paul’s intent on the intersections between the autographic and the atrophic (between self-referential and collectively reproduced work), interactions that so deeply resonate with all that we have been learning from you both - perhaps the deepest value operating here at the Specularium.

Lastly but not least, of course, is how you brought in and clarified the importance of a fourth figure in the processes of Threeing, which was an obscure aspect to us, now opening brand new points of entry into the Relational Circuit.

And, so, as we continue to take Paul’s chalice, of treating our work as if life depended on it, we send our deepest Love and Gratitude for your unending source of Energy, which we constantly turn to, no matter where you are.

Your scarf will be accompanied with a hard-copy of this letter, so please let us know how it feels to see it again.

In touch, narrowcasting from the Earthscore Specularium.

Yours,

Freia, Maria, Luis
(aka, Negain, Family)
Threeing ink drawing on silk by guest, Jean Gardner, urban ecologist and partner of Paul Ryan, with Maria Kamilla and Luis during her stay at Earthscore Specularium. Letter to Jean (left) and her response (next).
Dear Luis, Maria, and Freia,

A week ago I was with the three of you in the Earthscore Specularium. What an honor to be there as you settled into your new habitation! I felt welcomed, respected, valued. There were so many memorable and special moments, conversations that lasted for days, and Maria’s marvelous project that had us “Threeing” while painting a silk scarf! (I am eagerly awaiting its arrival.) What more could a traveler ask? I thank you and look forward to reciprocating when you visit me in New York City.

One week after my trip, my musings on the island city of New York keep returning to the island city of Stockholm. Both cities access the Atlantic Ocean through similar confluences of their surrounding waters: New York City where the fresh waters of the Hudson River meet the salty waters of New York Bay flowing into the Atlantic Ocean, Stockholm where the fresh waters of Lake Malaren meet the salty waters of the Baltic Sea moving into the Atlantic as well. Looked at in this way, the Atlantic Ocean is our common concern: climate disruption is altering its patterns in dramatic ways that are affecting both New York City and Stockholm.

What is emerging from these thoughts is how crucial your experiment in living during the Time of Climate Change is. Paraphrasing the poet Rilke: “We must change our lives.”

The Specularium is a new kind of habitation in a transforming habitat -- the climate-changed region of Stockholm -- where new habits (ways of living) are needed. I choose these three words carefully to describe my experience. They vividly explain in English how what we live in, where we live and how we live are variations on one indivisible dynamic, transforming reality.

Habitat - "the natural home or environment of an animal, plant, or other organism"
Any environment we live in on Gaia today is changing radically. A leading cause is our current habit of treating the living Earth as a dead resource to be mined for our consumption.

Habitation - "a place in which to live; a house or home"
Your recognition of the reality of climate-change inspired you to design the Specularium. You calculated the latitude of its location and oriented it in relation to the North-South axis when planning its sitting. Your use of the ubiquitous industrial greenhouse aligns the Specularium with current production processes that could be life-saving in a changed climate. Your inclusion of non-human forms of life provides shelter and subsistence for these life forms along with your own family - a truly prescient act. This foresight recognizes the modern ark needed as climate change clamps its austere reality onto Gaia’s once hospitable-for-life biosphere.

I am wondering if other features of a changing climate in the Stockholm region might be considered - such as changes in air and sea water temperatures, precipitation, wind patterns, land rising due to the melting of weighty glaciers, and so on. For instance, as a consequence of the rise in temperature in the Stockholm region, the area has shifted from a cold-temperate to a warm-temperate climate. What does this mean with regard to the heating and cooling of air within the Specularium for all the forms of life it shelters?
Also, I speculate that the use of the Geometry of Life -- the Golden Section, the Fibonacci Series - when deciding on relationships within and dimensions of future Speculariums might help support the life within it. Or have we changed the energy of the forms of life living in your "greenhouse" so much that their forms no longer resonate with the ancient Geometry of Life that brought them into being? I encourage you to consider using these geometric patterns that organize energy into matter to discover the patterns’ effects in the Time of Climate Change.

**Habit - "A recurrent, often unconscious pattern of behavior that is acquired through frequent repetition"**

I arrived at the Specularium as an invited guest. I immediately realized that accepted modes of action associated with being a guest did not fit into this new habitat. The realities of the Specularium called for new ways of acting in its two sections - one for "mess" (as in mess hall) and the other for the "farm." Add to this the dynamics of your family of three that includes a curious, joyful fifteen-month old. Out of necessity new behaviors find a fertile ground to emerge within the Specularium.

I quickly recognized the demands this new kind of human habitation places on the three of you in a changed habitat. The Specularium was changing your daily routines much as it was altering my unconscious expectations as a guest. You needed to:

- care for the non-human forms of life in the Specularium - fish, ducks, chickens, vegetation, water
- greet and accommodate visitors to the Fargfabriken, some of whom assumed the accustomed behavior of a guest, expecting to be waited on
- engage supportive curators, interns, and staff in the chores of the Specularium
- discuss and plan with me our Sunday public demonstration and presentation on the Specularium and Earthscore
- prepare meals, serve them, clean up afterwards
- keep a watchful eye on fifteen month old Freia whose every action rarely matched what we might be expecting.

I could continue the list by adding more items and breaking down the above points into particulars. I am sure you appreciate my point: we need new habits to live in a new kind of habitation in a changed habitat. As a guest, I began involving myself in these necessities, changing what it means to be a guest. Perhaps you could articulate these new behaviors for the many guests yet to arrive to help them acclimate. And also to help you with the many new "chores" the Specularium demands if life in the Time of Climate Change is to continue.

What it means to be human is in the process of transforming as I write to you. The Earthscore Specularium has opened an extraordinary portal to align ourselves with this dynamic, allowing us to create new forms of reciprocity, of community, and of caring for life!

I bow to your efforts,
Jean

Jean Gardner
Associate Professor of Social-Ecological History & Design, School of Constructed Environments, Parsons School for Design; Senior Expert Advisor, Buckminster Fuller Institute; Parsons Committee on Sustainable Systems; Co-Founder Michael Kalil Endowment for Smart Design; Emeritus Director at Large, Black Rock Forest
Components
a. earthscoring stream
b. joint aquaponic and hydroponic system
c. sleeping modules

Additional works on display at Earthscore Specularium 23 Sept. - 4 Oct., 2015

1. Sleeping Archive, Copenhagen 2013
2. Cocaine Chair (Sweat and Tears for Mies, Anxious Prop: Case 2), Berlin 2008
3. 28 de diciembre del 2007 (The Guardian), Berlin 2008
4. Immediate Archaeologies IV (Flying Carpet, prototype 1), Amman 2009
5. No More Home, Stockholm 2015
6. Turtle Two, Berlin 2009
7. Nonsphere IV (remaining modules), Berlin/Kabul 2006
8. Meteorite (Anxious Prop: Case 2), Berlin 2009

(Above and right) views of two samples of the eight redistributions of space and display of the ‘farm’ and the ‘mess’ to show the works of visiting colleagues at Earthscore Specularium, from 23 Sept. - 29 Oct., 2015.
Additional works on display at Earthscore Specularium 3 - 15 Nov., 2015

2. Flying Carpet Prototype Num.6, Peru 2012
3. Threeing Rug II, with Paul Ryan for Documenta 13, Huancayo/Kassel 2012-13
4. Flying Carpet Prototype Num.4&5, Peru 2012
5. No More Home, Stockholm 2015
6. Turtle Two, Berlin 2009
7. Nonsphere IV (memory), Berlin/Kabul 2006
8. 28 de diciembre del 2007 (The Guardian), Berlin 2008
9. Meteorite (Anxious Prop: Case 2), Berlin 2009
10. Sleeping Archive, Copenhagen 2013

Components
a. earthscoring stream
b. joint aquaponic and hydroponic systems
c. sleeping modules
Close view of "mess" component of Earthscore Specularium from main gallery at Fångfabriken, Stockholm 2015. Source photo: Karin Björkquist.
HYPOTHESES AND SUMMARIES
LIST OF HYPOTHESES

Breathtaking Greenhouse Parastructures is a deposition of ‘greenhouse’ from a Caribbean perspective. I grab ‘greenhouse’ whole, with my bare hands, to turn it over and over, as form, as prop, and as technic so to question its primary role as technological and historiographic object shaping Global Warming.

I do this by turning the core question – *is colonial memory the drive of Global Warming?* – into an adaptable, hypothetical subject.

You and I will take that subject on a walk, as our beloved beast, to probe the following open-ended, hypothetical affirmations:

- *If the invention of the greenhouse projects man’s illusory sense of mastery and domination over nature, then the concept of ‘greenhouse’ must be one of the beginnings to the geological timeline of the Anthropocene;*

- *If ‘greenhouse’ becomes the master metaphor to that illusory colonial power, amplifying the glassy, spectral cut between man and nature, then its deposition may decompress the traumata of colonial violence;*

- *…and, if the ‘greenhouse’ technology grows to become the physical and metaphorical enframing to the past and future of natural history and of natural science, then its deposition may display alternative procedures for remembering-to-forget…for remediating – as healings and transitions – away from the messianic destiny of Global Warming.*
SUMMARY OF SELECTED RESEARCH ACTIVITIES

The LIST OF ARTWORKS...(pp.57-129) presents a selection of my prior practise-based research work, and how it occurs mainly through experimental installation that incorporates discursive, collaborative, and performative forms of exhibition and of display. The materials and experiences accrued with each of my series hereon inform and contrast the activities I produced and/or participated in during the doctoral period of 2015 to 2019. These are:

- Earthscore Specularium (Nonsphere XV) commissioned installation for Experiment Stockholm exhibition at Färgfabriken, Stockholm SE (2015, see pp.96-129);
- 25% Review with Florian Dombois, Konstfack, (2015);
- Mnemonics 2015, conference, selected PhD presenter, King’s/Goldsmiths, London UK (2015);
- Resilience at Scale, conference, selected PhD presenter, Sheffield University, Sheffield UK (2015);
- Research travel to Albania to document communal greenhouse superstructures from the Soviet era, and how issues of climate change manifest as a boom of plastic-film greenhouse superstructures with USAID, Tirana and Fier, ALB (2015);
- Walter Benjamin in Palestine, conference, selected PhD presenter, University of the Arts, Ramallah (2015);
- Research dialogue with Howard Eiland and Patrizia Bach about Walter Benjamin’s Arcades Project, Cambridge USA / Berlin DE (2016-ongoing);
- Research travel based at ZHdK (hosted by Prof. Dr. Dombois), visiting sites in Frutigen, Grüningen, and the archives of Stiftung Bibliothek Oechselin, Einsiedeln CH (2016-19);
- Collapsed Greenhouse (Nonsphere XVI) commissioned installation for ‘Undisciplinary Learning’ by curator Suza Husse at District, Berlin DE (2016);
Seminar by Bernard Stiegler, selected PhD presenter and participant, Kent University Summer School, Paris F (2016);

*The Spectre and the Metaphor*, organiser of two mini-conferences with featured guests Esther Peeren, Ectoplasmic Materialism, Annie Lowe, and Vera Knúttsdóttir, Konstfack's Research Week, Stockholm SE (2016 & 2018);

*Impasse Finesse Neverness*, commissioned exhibition at the Museum of Archæology of Bahia, (and course for MFA Konstfack students) Salvador BRA (2017);

50% Review with Peter Lang, Konstfack (2017);

Research Travel to Puerto Rico, documentation of hurricane-devastated areas including industrial agriculture, agroecological farmers, and botanical garden, Rio Piedras, Santa Isabel, Coamo, Canovanas PR (2017);

Residency at the greenhouse laboratories of the IBG2 Plant Sciences Institute at Jülich Forschungszentrum, hosted by Prof. Dr. Ulrich Schurr, Jülich DE (2018);

Deconstructing Green, conference, selected PhD presenter with opponent Prof. Dr. Brigitte Baptiste, University of Copenhagen DK (2018);

80% Review with Pia Lindman, Konstfack, (2015);

*Activating the Wardian Table (Memory #02) for Transmediale, T.I.E.R. Berlin DE* (2019);

Wardian Table at ‘Agropoetics: Soil is an Inscribed Body’ exhibition at Savvy Contemporary, Berlin DE (2019);

Residency at the Axel Munthe Foundation at Villa San Michele in Capri, to investigate the Specularium at Villa Jovis, Capri / Napoli IT (2019).
SUMMARY OF MEMORIES FOR THE ANARCHIVE

Activities that informed the installation of *Anarquivo Negantrópico*:

- **Memory #01**: Sunday, 19.august.2018, 15:00–17:00
  ‘Read and Chant the Wetland’
  Gammelgaard Wetland, Herlev DK

- **Memory #02**: Thursday, 27.september.2018, 19:00–21:00
  ‘A reenactment and collective planting titled…
  Metalogue: “A Crème de Menthe, a Rusty Nail. Why Intransitive?”’
  T.I.E.R., Berlin DE

- **Memoria #03**: jueves, 20.diciembre.2018, desde las 10:00
  ‘Junte en La Estación Experimental de Plantas Medicinales y Venenosas’
  Jardín Botánico, Rio Piedras PR

  Konstfack, Stockholm SE / Gammelgaard, Herlev DK

  ‘Opening the Neganthropic Anarchive’
  Gammelgaard Wetland, Herlev DK

For details on each, go to the Intransitive Journal at
[http://www.intransitivejournal.org]
SUMMARY OF YIELDS

I’d like to now tell you about the most relevant yields of this doctoral work…starting with my last activity, while in residency at the Axel Munthe Foundation in Capri.

After searching for archival and printed matter, and making on-site visits to the ruins of Villa Jovis on the east coast of Capri (built ca. 30CE), I am still unable to find what was the exact function of its so-called Specularium. I arrived at two inconclusive, and unrelated threads:

One suggests the Specularium was a towering astrological observatory;

…the other, that it is considered to be the first known example of a greenhouse, built for hosting a year-round medicinal garden.

From these separate narratives, I contend that the Specularium was actually both: it is the first documented greenhouse hosting the emperor's medicinal garden, as well as an astrological observatory for predicting the emperor's health. This speculation, with which I here take free license to consider, compels me to draw the following contentions:

- the apparent division of these two narrative-threads, scientifically proposed in the early 20th century, seems to be emblematic of the modern dissociation of human mastery and natural relations. It becomes a potent metaphor to the modern conception of interiority and exteriority: of man being above and beyond, separate-from and dominant-over, nature;

- the Specularium, seen from that modern perspective, is not driven by astrological ritual, but by the power that the greenhouse proposed, as a new way to conserve (past) and/or to force (future) plant and animal life to serve man, regardless of environment or season. This is one of the core privileges that
give way to the sensation of ultimate colonial empowerment; one that eventually comes to undergird the toxic drives of modernity and industrialisation;

- there is evidence of proto-greenhouses appearing a millennium later, around the 11th century, and in parallel in Italy and in Korea; of sun- and fire-heated gardens covered with light fabrics. But it is not until the Germanic *Glashaus*, made of timber and primitive glass tiles, in parallel to orangeries, that seems to emerge as a ubiquitous part of feudal farms, as signs of early industrial agriculture from as early as the 15th century;

- that technological history of ‘greenhouse’ will here be presented as a genealogy – from Specularium, to medicinal garden, to observatory, to *Glashaus*, to orangerie, to Wardian Case, to conservatory, to Parisian arcade, to industrial superstructure, to Martian habitat – drawing both an embodiment and display to colonial violence and of commodity fetish. This is no better exemplified than by its use, literally, as the support structure to display the imperial project, Crystal Palace, built for the Great Exhibition of 1851;

- since then, the industrial greenhouse, in its guise of naturalised banality, continues to be a chief instrument to the global-industrial project, and perhaps the most egregious container for superrepressing the memory of colonial violence, against human and non-human worlds;

- the greenhouse, realised as simultaneous specimen of analysis and support-structure to itself, unfolds to become one of the chief instruments of industrial modernity. It is during that unfolding that the technology of greenhouse has evolved to become the materialisation of bioregional displacement purported by modern natural history and natural science. That power-reflex to dis-place, to transplant, is colonial memory’s disembodied violence, one which remains concealed and embedded within the anthropocentricity of technics;
· to remediate this kind of colonial violence – not unlike processing any other form of trauma (physical or emotional) – relies on acts of remembering to forget...to process what has been suppressed and entrenched by industrial dissociation and depersonalisation away from living;

· the industrial greenhouse is the ultimate suffocating agent of that dissociative reflex for self-preservation of the industrial, consumerist, and monocultural logic that the so-called free-market contradictorily purports;

· industrial greenhouses, in their current form as ‘superstructures’, are actually parastructures that promote the illusorily, messianic spectre of planetary and extra-planetary salvation from Global Warming;

· therefore, the invention of the greenhouse – along with the evolution of the human cerebral cortex, of language, agriculture, the water mill, the steam engine, and the atomic bomb, etc. – ought qualify to be a key geological moment that ‘begins’ the Anthropocene (a hypothesis I have already slated to be further explored after the PhD).

Not unlike our beast, our hypothetical subject of colonial memory, these yields above will come along with us to retroactively corroborate the material effort that lies indirectly ahead. In all, it is a careful, scaled transition of ‘greenhouse’: from scale-less instrument and spectre of colonial violence, to scalable parastructure for fostering biodiversity.

That transition is to be itself supported by reviewing *phenomenotechnologies*, as the support structures of technoscience, and of *mnemotechnologies* as the support structures of post-ontological memory. By offering a series of partial and critical discourses on each, as a contrast to the metaphorical ‘greenhouse’ manifold, I contend that a transition of the latter's meanings and roles can take hold in a manner that is neither an object nor a solution. It is a kind of reverse-engineering that leads to a manifold of open-ended points of departure that:
· depose the parastructural form of greenhouse from its obsolete and naturalised phantasmagoric figure;

· provide a revived spectral agency where its parastructural potential can serve – not to further conceal the colonial violence of Western objectivity – but to un-mediate, dis-play, and re-mediate the ruptures of the object-relations that foster life;

· and, to carefully support us to resist, interrupt, and diverge away from the insidious, messianic drive of Global Warming.

I hope that you will here encounter a diversity of spaces and methodologies that encourage you to transition through the ‘greenhouse’, not by a categorical framework, but with a careful practice, one we will soon make a call to be an epistemológica. It is a practice that looks to depose the technoscientific object of observation and its memory to bring about decolonial approaches that are mindful of the pitfalls of our tendencies towards ecological sovereignty.

Therefore, I’d like for us, during our stroll on this broad landscape and ‘theatre’, to perceive the deposition of ‘greenhouse’ as the triadic social pedestal that supports me and you to unpack the superrepressed void capacity of colonialism. Again, on each other’s own respective terms, as humans, as coloniser, as colonised, or as bystander. If we are able to remember to forget, to re-mediate the drives of colonial violence splicing the human-non-human worlds, we may then be able to give ourselves time and space towards resisting the ultimate homogenising force – the passive suicide of Global Warming. Unlearning the trauma and privileges of colonial drive embedded in Western technics, while relearning the abilities to foster a diverging multiplicity of margins and perspectives, will now be needed to make this beautiful planet livable, breathable again.
HYPOTHESES & SUMMARIES...

LIST OF PUBLISHED MATERIALS [during PhD period]


METHODS AND METAPHORS
METHODS & METAPHORS... c.(G)_6

convolute (G)_6

METHODS FOR DEPOSING THE GREENHOUSE METAPHOR

ABSTRACT:
Convolute (G)_6 describes the physical and metaphorical methods I have been enacting to question, unfold, and remediate ‘greenhouse’. I do so by briefly commenting on the nature of the greenhouse as object of display, and how it becomes itself a system of experimentation. Thereafter, I specify the relation between three methods that flow between being general, specific, and recursive. These are ‘Art as Research’, ‘splicing, walking, deposing’, and ‘retroduction [abduction]’, respectively. These methods loosely constitute my approach to practise-based research, in this instance, to process the trauma of colonial violence and its entropic effects on our modes of perception.

Thereafter, you will find a segment of a year-long conversation. It was a ‘trialogue’ between Howard Eiland, Patrizia Bach, and I. As translator and scholar of Walter Benjamin, the encounters with Eiland, in person and over email, mark the initial research thread: to pursue the fragmented figure and lay-out of my PhD as montage, as well as the tone for a deliberate kind of ‘indirection’. The parallel engagement with artist and Benjamin researcher Patrizia Bach is reflected by a series of ‘entries’ she inserts in the form of drawings. Her drawings are part of a file of interpretations that also supplement the Arcades Project.

In all, both the text and drawings in the ‘trialogue’ are a glimpse into how the PhD is both informed by – and deployed for – the supplementing of Benjamin’s unfinished opus, Das Passagen-Werk, or Arcades Project… in my case, the PhD as a deeper technological deposition of ‘greenhouse’, as the predecessor and successor to the glass-covering superstructures of the Parisian arcades.
SCAFFOLD OF TERMS for c.(G)₆

[FIND SOURCES OF DEFINITIONS AT THE INDEX OF TERMS pp.733-757]

life (n.) p.745 is the quality that drives diversity and habitability. As per Marisol de la Cadena, ‘instead of the expression of shared relations, and stewardship of nature, commons would be the expression of a worlding of many worlds ecologically related across their constitutive divergence. As a practice of life that takes care of interests in common, yet not the same interest, the alliance between environmentalists and local guardians (of lagoons, rivers, forests) could impinge upon the required distribution of the sensible into universal nature and locally differentiated humans, thus disrupting the agreement that made the anthro-po-not-seen and questioning the legitimacy of its war against those who question that distribution. The alliance would also queer the requirement of politics for sameness and provoke ontological disagreement among those who share sameness inaugurating an altogether different practice of politics: one across divergence.’ It is critically important to keep in front of us a notion of life, and of living, that does resemble the current toxic, disproportionate form of entropy.

As per Dorion Sagan, ‘I don’t think it’s possible to understand life without understanding the role of energy. Life is a complex thermodynamic system. Like a whirlpool or flame, the shape alone stays stable as energy is used and matter is cycled. It absolutely depends on the energy and matter. Deprive a storm system of its atmospheric pressure gradient, an autocatalytic chemical reaction of its chemical gradient, or hexagonal shapes in fluids of their temperature gradient, and they disappear. The same is true of life: if you deprive cyanobacteria or purple sulphur bacteria or plants of their solar energy gradient, or animals of their food-oxygen gradient, they disappear. The big difference with life is that it has found a way, via the recursive DNA-RNA-protein system, to restart the flame….I would argue, and have, that the metabolic essence of life is to degrade gradients. Inanimate complex systems do this, but staying alive prolongs the process. I consider this a lucid, Greek-style idea. And there are facts to back it up.’

breathtaking (adj.) p.735 signifies how I feel about Global Warming…about how the unjust and incomprehensible destruction of our habitats, no less of our breathable air, is at once shocking and suffocating. The shock and suffocation is another twofold to the cut between human and environment. As far as the environmental side, I refer here to the
Nobel Peace Prize speech ‘Peace and Humanity’ by Norman Borlaug who described the green revolution as a ‘temporary success in man’s war against hunger and deprivation; giving man a breathing space. If fully implemented, the revolution can provide sufficient food for sustenance during the next three decades. But the frightening power of human reproduction must also be curbed; otherwise the success of the green revolution will be ephemeral only.’ In just five decades, we have surely done exactly what Borlaug warned. Aside from taking exception to what I find is his, at best, unwitting use of ‘reproduction’ to apotheosise industrial production, he has unquestionably predicted how this ‘breathing’ space is being turned into a ‘frightening’ destiny that may irreparably damage the conditions that do foster natural reproduction, and life. For instance, advanced capitalism’s heightened effort to monetarise the very values of our ecosystem services, is to me, as to many others, the last phase of our frightening decline. Now, as far as the human side of ‘breathtaking’, while Borlaug’s green revolution of genetic engineering seems to have saved the lives of billions during the 20th century, we could simultaneously witness the history of the global agroindustrial project – literally shouldered by the enslaving of colonised subjects – being consciously omitted, if erased. Since the 1950’s, to this very day in which I am writing these words, the claim for civil rights has been painted largely as struggle in isolation, tied mostly to the images of segregation. That is clearly so because revisiting the images of slavery, that are the images of the development of industrial agriculture, is for the ‘free’ market to look in the mirror. This is because so much of European and North American power and wealth is still undergirded by that heinous history. Therefore, I turn to Magdalena Górska who tells us on her 2016 PhD - “I CAN’T BREATHE” – ERIC GARNER’S LAST WORDS AS HE STRUGGLED IN A POLICE CHOKEHOLD FOR A BREATH OF AIR AND THE RIGHT FOR HIS EXISTENCE AND RESISTANCE AGAINST A RACIST SYSTEM […] ‘I CAN’T BREATHE AS A PUBLIC SCREAM. I CAN’T BREATHE AS AN INTERSECTIONALLY SITUATED INDIVIDUAL AND COLLECTIVE STRUGGLE. I CAN’T BREATHE AS DIFFERENTIATION. EXISTENTIAL INEVI TABILTY. POLITICAL NECESSITY.’

indirection/montage (n.) p.744 Howard Eiland tells us in his manuscript-introduction to his recent translation of Benjamin’s Trauerspiel that - ‘In the “Epistemo-Critical Foreword” to the trauerspiel book, which at the outset raises the question of the mode of presentation appropriate to philosophy,
Benjamin distinguishes his own critical methodology from “the seamless deductive connectivity of science” and from what he calls Systemlogik. Systematic closure, he maintains, has nothing to do with truth, which should be understood not as an unveiling that destroys the mystery but as revelation that does it justice. Truth is distinguished from positive knowledge; we can close upon and possess pieces of knowledge, but truth is not a matter of intention or possession. With an implicit glance at the Greek etymology, he defines his method as one of indirection, detour, the roundabout way, even wile and ruse: “Methode ist Umweg” [Method is indirection]. And, because his subject necessitates a theologically informed perspective, he adduces a scholastic-theological term to characterize the project as a whole: “presentation as indirection — this, then, is the methodological character of the tractatus.” In opposition to established conventions of linear argumentation, Benjamin posits an “intermittent rhythm” for philosophy: thinking’s presentation of itself is continually taking a breath, so to speak, and starting anew with the problematic. The punctuated, constellationary way of proceeding that is the method of this tractate, and that reflects the discontinuous or monadological structure of the world of ideas, is likened, in the extraordinary first section of the foreword, to the assemblage of medieval mosaic from brilliant individual bits. (To Scholem, Benjamin describes his method of stitching together the sometimes-long quotations in the trauerspiel book as “the craziest mosaic technique,” and to his “patron,” Hugo von Hofmannsthall, he claims that the academic format was merely an occasion for putting into practice his citational strategies.) Only the most profound and exact immersion in the micrological detail of the retrieved material, Benjamin insists, enables that transformation of historical “material content” into philosophical “truth content” which makes of the tractate something more than antiquarian, and gives to the critical enterprise its gravity and relevance.

epistemic thing (n.) p.740 is a proposed term by Hans-Jörg Rheinberger that largely constitutes the basic features of experimental systems. Within these empirical science systems, ‘a particular constellation of scientific and technical objects — that is, the technical conditions of the production of scientific objects — is set in place. Both entities mutually depend on each other. They are inextricably linked insofar as one does not exist without the other. This is the reason why I actually prefer to talk about epistemic objects instead of simply scientific objects, “epistemic” pointing to the fact that these objects are not independent of the technical means with which they are being shaped. This is the reason why Gaston Bachelard coined the notion of “phenomenotechnique” for the process in question. The first of these two entities, the epistemic object, is
that badly defined something that is the very target of a particular experimental research endeavor. Paradoxically speaking, it embodies — but in a way that can be experimentally handled — what one does not yet exactly know. The scientific object is therefore necessarily underdetermined; it is, one could say, under-defined by definition. They are “vague” objects [and] (t)his is actually the reason for another linguistic preference of mine, namely to talk about epistemic things in this context rather than epistemic objects.’

**art as research (phr.) p.734** Artist and researcher Florian Dombois tells us that ‘art as research is an approach to art as praxis that may take up the solutions scientific research offers and bat them back as questions. Scientific research normally starts out with a research question, presenting a hypothesis which, within the framework of a research project, is proved or disproved. This process causes difficulties when it comes to the arts. The arts rarely offer unambiguous answers, and presenting a hypothesis at the outset would normally create an insurmountable obstacle. One should perhaps turn the process around and expect the exact opposite of the arts: a project could be expected to begin with an answer, with an outline of the field of inquiry, and only at the end would the best possible question be formulated.’

**recursive (adv.) p.752** In the foreword of H.J. Rheinberger’s *An Epistemology of the Concrete*, Tim Lenoir tells us that ‘Against the positivists, Fleck and Bachelard show that the objects of scientific knowledge are not given ready made in nature. Indeed, according to Bachelard, scientific objects do not even exist in nature; rather, they are technically produced in a continuous process of assemblage, rectification, and repetition — a process Rheinberger calls “recursion”; that is to say, the theory of knowledge considered classically as an existing structure of logic applied to fit lock and key to an externally existing, pre-given nature is replaced in Rheinberger’s account by epistemology considered as a deeply historical process of constituting both the scientific object and our knowledge in a never-ending recursive process of reconfiguration and rectification.’

**depose (v.) p.737** in geology and in climate science, deposition refers to the stratification of layers of soil (or ice) as a way to determine geological periods and geochemical compositions of atmospheres over time. In Christian religion deposition refers to the removing the body of Christ from the cross after his passing. In legal and political terms it refers to interrogating a witness as a form of discovery, or of removing an entity from its position of power by the force of question.
abduct (v.) p.733 is a form of inference which starts with an observation or set of observations, then seeks to find the simplest and most likely explanation. This process, unlike deductive reasoning, yields a plausible conclusion but does not positively verify it. Abductive conclusions are thus qualified as having a remnant of uncertainty or doubt, which is expressed in retreated terms such as ‘best available’ or ‘most likely’. After working as researcher and teaching assistant to Marshall McLuhan at Hunter College, video artist Paul Ryan found himself diving into the work of Charles Sanders Peirce, spending several years investigating several of Peirce’s archives. He became curious and assertive about certain aspects of Peirce’s semiotic and, in his interest about cybernetics, in relation to environmental activism of the ‘60s and ‘70s, became close friends with Gregory Bateson. Ryan challenged Bateson on several fronts, including on the matter of abduction. For an example, please visit a conversation they had in San Francisco in 1977 which you can find in its entirety online at www.earthscore.org, or here in an edited version on c.(D)3.

paradigm (n.) p.748 Giorgio Agamben’s notion of paradigm moves from individual to individual, neutralizing the dichotomy between individual and general. The condition becomes paradigmatic by its suspension from, and highlighting of, its belonging to a group, whereas its status can never be separated from its individuality. The group is not presupposed in but rather immanent to the paradigm, and its historical status does not involve past or present, but rather the crossing of the two, producing no original image as a blurring of the possibility of its simulation. That definition is not a hypothesis through which to explain modernity by tracing it back to a historical origin. The aim is instead to register various events and phenomena whose relations could have been missed in a standard historical thesis that relies on traditional inference such as induction or deduction. These events and phenomena are encountered across time, and so standard tools such as recovered objects and documents are required. Conversely, the findings and relations, the signatures reached, do not appear as a previous origin or a present, but rather provide the inquirers with present presence, just as much as the past of the object. Two further samples of such conditioning of paradigm can be found in Åsberg, et al., where speculation takes a principal role in deposing paternalistic structures of analysis: ‘Simone de Beauvoir’s The Second Sex is in fact a paradigmatic case of feminist speculation…. The terrain that de Beauvoir opened up for us
was one of diagnosing processes of naturalisation along sexually differentiated lines and enabling a situated leap towards futures of transversal connections.’ Also, de Sousa Santos, in his effort to depose the structures of colonial transgression, states that ‘In the process we will move from a paradigm based on the technical application of science to a paradigm based on the edifying application of prudent knowledges, knowledges that transform research objects into solitary subjects and urge knowledge-based actions to navigate prudently within the sight of consequences.’

interpenetrate (v.) p.744 Eiland explains that in ‘Excavation and Memory’ ‘Benjamin lays more stress on “the strata which first had to be broken through,” on the exact location in “today’s ground” where the excavation is situated; that is, he lays stress on the present moment of study that provides a perspective on the past by which it is itself conditioned: what he calls in ‘The Arcades Project the “now of recognizability,” the moment of historical awakening. Real and effective remembrance (wirkliche Erinnerung) is, as we’ve said, an actualization – a renewal and making new – of what has been, a return of the past moment in an image transformed by what Proust calls the terrible re-creative power of memory. Newer and older phenomena interpenetrate to form the historical constellation of the dialectical image, with its fore-history and after-history. (As an example, Benjamin in the Arcades adduces the fore-history and after-history of the phenomenon of Baudelaire: to wit, medieval allegory and Jugendstil [N10,3]).’ The role of interpenetration – one that deliberately discuss to polemicize the root of ‘penetration’ – defies both the conventional act of historiographic construction that is critically self-aware of its privilege, while giving it the potential to mediate through ambiguous, non-chronological normatives. In doing so, I would argue that we can turn to Benjamin’s conception to primarily depose the binary notions of interiority and exteriority, and instead allow for androgynous and multiple interrelations to blossom as genuine conditions of nature, and of natural history.

intransitive (adj.) p.745 In grammar, it is the sense or use of a verb that does not take a direct object. In mathematics, it is a property of binary relations that are not of transitive relations. This may include any relation that is not transitive, or the stronger property of antitransitivity, which describes a relation that is never transitive. In cybernetics, it is the possibility to understand a position in a continuum without going outside the bounds of the continuum by being explained by two other positions.
Charles Peirce’s triadic categorical of ‘firstness, secondness, and thirdness’ is interpreted to create a way of describing the intransitive relations between sensing, reacting, and interpreting that are at the core of cognition. Warren McCulloch has argued that the non-hierarchic circularity of preference inherent in intransitive choices is at the core of the human logic of survival. Drawing from Peirce and from McCulloch, video artist and semiotician Paul Ryan argued that an understanding of intransitivity, such as he has proposed through his notational system ‘Earthscore’, and his performative practice ‘Threeing’, leads to socially non-hierarchic, heterarchic ways for choices that naturally engender art.

**messianic (adj.) p.746** Eiland tells us that ‘Benjamin applies a dynamic constellatory model of reality to the experience of time (spacetime, Zeittauem), and to the idea of history, developing a concept of the retrospective-anticipatory historical moment as site of the lightning flash of recognition, the sudden emergence of what he calls “the dialectical image.” This kind of image is dialectical because it looks simultaneously backward and forward in time. In the peculiar tension of its expansive concentration, the meaning of past events is actualized – is distilled and constructed anew in confrontation with concerns of the present day. Already in 1914-1915, as a university student, Benjamin speaks of history or historical understanding in terms of a “focal point” of attention and remembrance, a state of being in which what has been becomes futural, and in which the gravity of lament for what is irretrievable and unredeemable coexists with the radiation of a messianic promise.' [Jacques Derrida’s notion of messianic will be expanded upon elsewhere, see c.(A) & c.(B).]

**schismogenesis (n.) p.754** literally means ‘creation of a growing division’. Gregory Bateson describes two forms of schismogenesis (complementary and symmetrical) and proposes that both forms are self-destructive to the parties involved. He goes on to suggest that researchers look into methods that one or both parties may employ to stop a schismogenesis before it reaches its destructive stage. Bateson first published the concept in his classic 1936 ethnography titled *Naven: A Survey of the Problems suggested by a Composite Picture of the Culture of a New Guinea Tribe drawn from Three Points of View*, reissued with a new Epilogue in 1958. In it, Bateson focused on how groups of women and groups of men of the Iatmul people of Papua seemingly inverted their everyday, gendered-norms for dress, behaviour, and emotional expression. For the most part, these groups of
people belonged to different patrilineages who did not regularly renew their marriage alliances. The naven ritual served to correct schismogenesis, enabling the society to endure.

**pharmakon (n.)** p.751 this term is of crucial importance, for it probably most adeptly defines the very top surface layer, on either side, inside and outside, of greenhouse. ‘Greenhouse’ is a strong pharmakon for it is not just itself the very-exteriorization of colonial memory for the construction of the life sciences, and of natural history, but it also holds a critically binary role in the projected cure and disease of Global Warming. I’d like to complement my statement-definition with what Mark Hansen tells us about the pharmakon in memory - ‘If we learn from Plato — or rather, from one side of Plato — that artificial memory is a pharmakon, a gift that is also a threat (since dependence on artificial memory makes the training of our own memory less imperative), we learn from Derrida that technical exteriorization or supplementation is an intrinsic, irreducible dimension of the logic and function of memory as such. It is this technical contamination of memory that allows the latter to be historicized, split into distinct epochs of what Stiegler, following Derrida [and the linguist Sylvain Auroux], calls "grammatization": the exteriorization of memory in the form of discrete marks, traces, or gramme that forms the hypomnesic milieu for anamnesis. As Stiegler notes, these epochs include those of the stone tool, of ideogrammatic writing, of the alphabet, of analogue and digital recording, and now of digitization and the Internet. As different historically specific configurations of anamnesis with techinics, these epochs individually and collectively demonstrate that there is no memory that is not hypomnesic. This, again, is why everything hinges on how hypomnesis is articulated with anamnesis.

**social (n./adj.)** p.754 for the moment, given the complexity (and ubiquity) of the term, I will limit ‘social’ to three personally defined, affirmative extensions:

1. disposition of all species to create and foster relations;
2. acts and organisations, beyond human agency, that lead to collective and corrective regulation of toxicities that may end life;
3. a force that energises recursions between art, history, and science.

These three strands are insufficient to cover all areas of the social. That said, it seems to me that, in general, to go against social potentials is a
pathology that ceases to acknowledge and engage the associative and epistemic worlds beyond human privilege. I still feel that the social is what we would broadly call the relations that give form and figure to affirmative forms for life. And, in the coming passages, I will look to contrast social against various compounds and backdrops, no less with the apparent, construction of reality through phenomenotechnologies [see c.(C)₁ & c.(D)₃].

**intersectionality (n.) p.745** From the standpoint of jurisprudence, Kimberlé Crenshaw activates this important term in the introduction to her landmark paper ‘Demarginalizing the Intersection of Race and Sex’, stating that - ‘Th(e) problems of exclusion cannot be solved simply by including Black women within an already established analytical structure. Because the intersectional experience is greater than the sum of racism and sexism, any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which Black women are subordinated. Thus, for feminist theory and antiracist policy discourse to embrace the experiences and concerns of Black women, the entire framework that has been used as a basis for translating “women’s experience” or “the Black experience” into concrete policy demands must be rethought and recast. As examples of theoretical and political developments that miss the mark with respect to Black women because of their failure to consider intersectionality, I will briefly discuss the feminist critique of rape and separate spheres ideology, and the public policy debates concerning female-headed households within the Black community.’

**display/dis-play (n., v.) p.738** is first addressed as the act of being a support structure, for art, theatre, or science, not unlike a pedestal, a prop, or a preparation, respectively. It also refers to the act of showing, activating, or demonstrating, also in art, performative, and scientific terms, respectively. The hyphenated ‘dis-play’ is to stress its possible variation as an act that may either deform, depose, or displace the nature of the object or action being both facilitated and observed, or that may produce a dysfunction in the nature of that object or action, potentially at the very support structure upon which it depends. This ‘play’ between object and action is deliberate, so as to polemicize the sculptural complexities between physical support, perceptual phenomena, dematerialisation, the expanded field, and collective imagination.

**fractional coherence (n.) p.741** is defined by John Law as he takes
Lyotard's definition of the postmodern to signify an ‘incredulity toward metanarratives,’ which in practice means a rejection of narratives in general, except for small sections that can be assembled and related fractionally. Inspired by fractals, Law seeks to complement postmodernity by questioning the unity of the object. He argues that objects are simultaneously coherent and incoherent, single and multiple. Law, making direct reference to Donna Haraway’s ‘situated knowledges’, characterizes fractional coherence as ‘the state of being more than one but less than many, more than one dimension but less than two.’ Through it, Law claims to avoid the choice between modernism and postmodernism, between singular coherence and multiple incoherence. In place of narrative, Law claims to follow the metaphor of the ‘pinboard,’ which juxtaposes snippets of text and pictures without implying a specific linear coherence or ‘singularity.’

As mentioned, the work of Borges and Cortazar, as well as of Warburg contribute to this kind of physical and metaphorical operation (particularly when considering the latter’s *Atlas Mnemosyne* 1929/2010). As such, the conditions proposed by fractional coherence will ultimately relate to the general composition of this PhD, as well as about questioning the roles, and values, of metanarratives, which will come up again in the struggle to define post-ontology.

**metaphor (n.) p.746** is a figure of speech assigned to an object, action or situation that may represent abstract or conceptual qualities; making phenomena perceptible, but not literally applicable. It is a commonly used narrative instrument that, unlike analogy, is not about comparison, but about the transfer of an idea beyond the mere physical-literal sense. In this sense, I am less concerned with its overuse as illustrative or reductionist instrument for illustration or explanation, but more so interested in metaphor as embodied activator of affective neurochemical activity. Through the work of artist Kader Attia, we learn about what behavioural neurologist Vilayanur Ramachandran tells us about metaphor. Through his groundbreaking studies on ‘phantom pain’, he states that metaphor is a narrative tool with broad capacity to stimulate brain activity, often mediating across our cerebral hemispheres, and thus becoming a potent instrument of exploration in neurological and cognitive sciences. Ramachandran additionally states that it is artists who are uniquely equipped to produce significant modes of affect through metaphor, because of their disposition to trigger abstract or unforeseen cognitive sensations.
From Practise-Based Experimentation to Art as Research

By the time I started the PhD, I had been treating my sculptures, installations, and performances as reflexive processes of environmental experimentation. The work, formally and/or experientially, is about displaying and re-mediating forces and conflicts between human society and the environment; and the subject-matter unfolded is something that ‘builds’ from the previous… research that built-from and produced-forth data and reflections, as recursions. Obviously, this recursive approach is not an experimental systems approach from the strict sense of the empirical sciences, but I'd consider it to be, indirectly, an experimental system that social science and research in the arts could employ and adapt, surely from the shared curiosity over the *vagueness* of epistemic things.

What I mean is that, for reasons that we will revise elsewhere [see c.(D)] I consider my research work through social pedestals to be a responsive and adaptable set of procedures in which to think of support structures, or affective infrastructures, as objects of display, of performative staging, and/or of sculptural form that interface with unforeseen forces. In this case, and over time, by reflecting on these recursions and iterations through my installation work, I somehow arrived at the intuition that the greenhouse (as building, as house, before thinking of it as its manifold of technology) could be a potent *epistemic thing*, particularly to investigate the mysterious invisibilities that I suspect drive Global Warming. And that perhaps, if I were to treat the greenhouse as such *thing*, then I would have to think of how to test and observe it. With my already set predilection for working with support and display structures for recollecting and collectivity, it seemed required to turn the greenhouse into its own support for analysis, placed against perhaps my production of these social pedestals as the selected system of analysis.
Now, Hans-Jörg Rheinberger tells us that experimental systems: 1) are the most compact integral working units of contemporary empirical research; 2) are the process by which to undergo differential reproduction of arrangements in which new knowledge is generated beyond what one has been able to imagine and anticipate; 3) represent the units within which the signifiers of knowledge are produced; and 4) produce ramifications and fusions that lead to broader ensembles of such systems, something we could call experimental cultures.

These qualities, that again, pertain strictly to the empirical sciences, does seem to lend themselves to intersect with what could serve iterative process in the arts, particularly in the area of perception, and therefore it has become a welcomed perspective to find moments of comparative and affirmative relations between the arts and the sciences, and even more presciently, in shaping beneficial discourses of critique between their respective disciplines. Taking note of Hans Blumenberg’s *Theorie der Unbegrifflichkeit* (2007) Rheinberger tells us that ‘in research, one “acts on objects that one does not perceive.”’ That act, which is not to be limited by mere naming or applicability, keeping a distinction between concept and object (between the Cartesian interior | exterior) but by an entwined *embodiment* where the epistemic object’s value is not to be a mere, resolved, technical object, but an enigmatic thing, a modus for further inquiry, into an environment of *epistemicity*. The inherent potential of such epistemic things is intimately connected with the structure of experimental systems, and to Rheinberger, as it is to me, this is not a deleterious or deplorable condition.

Such condition, as it is for Rheinberger, lends itself to be a motor of knowledge-acquisition, and that is a consequence of how each research path chosen, in that state of epistemicity, of vagueness, of urgency, can have, at a particular stage of the experimental process, consequences for another path at some other stage.

Now, it is of critical importance to slightly diverge here, not necessarily

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from the path of experimentation, as those divergences are indeed highly desirable, but from the *necessity* for knowledge-acquisition. Perhaps this is the critical distinction that I would like to draw, between what an empirical endeavor would be framed to produce, and the kind of endeavor our stroll is to enact...where we are not driven by the objective of producing knowledge (although that may be a welcome result) but on an endeavor that looks to incite perceptions that not necessarily pertain to the strict definition of epistemology. We here take the vagueness of the epistemic thing to heart, and look to play, display, and dis-play unforeseen forms, figures and forces through the experimental game, precisely ‘*without being self-referential in an idealistic fashion.*’

I contend that this is substantiated by the way I treat the vast majority of my works as three long-term, consecutive ‘series’ [Turtles, Non-spheres, Immediate Archealogies, as per the *LIST...* pp. 58-77] where the produced materials build upon one another while requiring not just contemplative but also reflexive engagement. This kind of engagement is deliberately implemented as a long-term field for testing the blurring of the boundaries between the artworks, forms of scientific and cultural endeavour, the public, and myself. The approach – which is lathed with plenty of failures – has always been dedicated to concerns and intuitions about the collective perception of the widespread contradictions between human modes of production, life, and Global Warming. The essential notion of testing ‘display’ as subject is treated as an epistemic process, as a staging to display and dis-play human and non-human and interfaces and to explore the physical form itself of the invisible forces of accelerated climate change. The ‘general’ trajectory of art-making as practise-based experimentation, as reviewed through the list of artworks that precede the start of the dissertation, is itself reflected upon, working discretely through the methodology of artist Florian Dombois, which he terms ‘*art as research*’. I believe it offers a comprehensive approach to thinking through art as a generous play that unconventionally nourishes scientific and artistic endeavour. In no small measure, I work by taking cues from the broad transdisciplinary milieu of artwork, science, and pedagogy that he has been developing over the years, primarily from his *Wind Tunnel* project at ZHdK. I also take

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17 ibid. Rheinberger 2010, 27.
cues from Dombois’ self-prescribed list of guidelines, and specifically regarding its 10th point:

*Art as Research* can take up the solutions scientific research offers and returns them back as questions

Scientific research normally starts out with a research question, presenting a hypothesis which, within the framework of a research project, is proved or disproved. This process causes difficulties when it comes to the arts. The arts rarely offer unambiguous answers, and presenting a hypothesis at the outset would normally create an insurmountable obstacle. One should perhaps turn the process around and expect the exact opposite from the arts: a project could be expected to begin with an answer, with an outline of the field of inquiry, and only at the end would the best possible question be formulated. 18

I consider this point carefully. I do so because it aids to demonstrate, in physical and discursive terms, how *art as research* is intrinsic to the PhD and to my practice, and in general to the artworks that have been exhibited, prior to, as well as during the course of this dissertation. The method-point manifests as its own value to generate questions that imply potential and indeterminacy, rather than provide reified, terminal answers. Dombois does suggest that ‘hypothesis’ may not be the ideal vehicle to carry those questions. And while I subscribe to what Dombois means, I’d supplement the value of ‘hypothesis’ by contrasting it to the spirit of what C.S. Peirce defines as such; hypothesis as the vehicle for a continuous process of generating more questions, and for gravitating the field where, as per Kelly Parker – ‘the evolution of ideas is best conceived as a social phenomenon, and where mind is a general entity not confined within a Cartesian consciousness or shut up within the human skull.’ Peirce affirmatively called that field the ‘Infinite Community of Inquiry’.19 The PhD here before you works materially as evidence

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19 Peirce does not offer positive reasons to think that such conception of community is plausible: “that assumption that man or the community (which may be wider than man) shall ever arrive at a state of information greater than some definite finite information, is entirely unsupported by reasons”; it can only be supported by an “infinite hope” that this is the case (W 2:271-72).’ - Parker, Kelly A. The Continuity of Peirce’s Thought. (1st ed, Vanderbilt University Press, 1998) 15.
towards those kinds of processes of inquiry, observation, and analysis where community is a plural site – a locus. The community that a social pedestal situates enacts research itself as the artform to be practiced, in this case, to test the edges, forces, and embodiment of the metaphors that are projected by ‘greenhouse’.

Retroduction
[Abduction]

Video artist and semiotician Paul Ryan introduced me to ‘abduction’. This is C.S. Peirce’s own category of inference; what he would call the *synechism* of the overarching continuity of time, space, and law – beyond the mind-matter dualism – that energises the Infinite Community of Inquiry. Abduction is a type of inference he (mysteriously) interchanged with ‘retroduction’, and is at the core of his philosophy of science; one rooted in rigorous advocacy for ‘hypothesis’, ‘community’, and ‘continuity’ to become the raw materials that energise his method for speculation, of *speculative rhetoric*; Peirce’s *methodeutic*.

Abduction is the kind of speculative inference, not unlike a kind of reverse-engineering, which I deliberately look to catalyse through the dissertation. I do so precisely to suggest that the dissertation is not rooted in a predetermined intent, but rather that it is mobilised by an abductive/retroductive inquiry that allows for doubt. This Peircean approach is not a quantitative logic but a qualitative mediation that privileges continuity over determined outcomes, one that, according to Peirce, metabolises the growth and decay of scientific endeavour. Luciana Parisi more recently states, ‘…induction, according to Peirce, implies testing the hypothesis through a prediction, which has already been verified. Abduction, on the contrary, offers us a method for investigating an original suggestion delimited neither by a priori theory or posteriori verification. Abduction is rather a method primarily attuned to the unpredictable nature of fact, thought, and experience.’

Peirce’s hypothetical methodeutic is ultimately, but not terminally,

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a recursive process that I place upon the manifold of greenhouse to physically and discursively reproduce more questions. It is not an object for determining outcomes, but a surface-medium that may demonstrate an open-ended index for displaying manifold perspectives. In the case of Breathtaking Greenhouse Parastructures, I turn to the methodeutic of abduction to resist the perceptual, homogenising entropy of accelerated climate change as rational logic.
Walking, Splicing, Deposing


En el mundo del poderoso no caben más que los grandes y sus servidores. En el mundo que queremos nosotros caben todos.

El mundo que queremos es uno donde quepan muchos mundos. La Patria que construimos es una donde quepan todos los pueblos y sus lenguas, que todos los pasos la caminen, que todos la rían, que la amanezcan todos. 21

Above, passage III of the Fourth Zapatista Declaration from the Lacandonia Jungle – made in January of 1996 in the native náhuatl language – proclaims that many words are walked on the world... Many worlds are made... Many worlds make us... We make real worlds... We are made by real words... In the world of the powerful only the big and their enablers fit... On the world we want, many worlds fit.

I make my own translation of that Zapatista declaration because I want it to come from my own voice as well. Marisol de la Cadena and Mario Blaser also speak this voice to initiate their collection of essays under the introduction titled Pluriverse: Proposal for a World of many Worlds. Just as they, I do so as well. Para dar camino a esta obra... To give way to this work.

I will not dwell long on the reasonings for the walk of words I wish for you and I to share, and for the worlds our walk may yield. I think the

declaration above already speaks those volumes. That said – as I mentioned on the EXPOSÉ, the EXEGESIS and on the DISCLAIMER – the walking is a spatialised narrative and method-tactic to play and unfold a kind of psychogeography: it is an evolving positional perspective, rather than a singular, directional one. I mean for the work that lies ahead, on our walk, to rarely display things in the linear. That is because I aspire to show the nature of how my work takes place in time as chronotope – as it takes place in memory – not chronologically [see c.((C)1)]. This is the manner and format I choose to demonstrate various forms of common and diverging exchanges of perspectives: mine, yours, ours, of those who influence my processes, of the savage, of the non-human, of the Carib [see c.((A)2)]. The walk is discrete and adaptable, enacted to go ‘on’ and through the ‘greenhouse’ as a landscape of continuous transitions. And, that is because ‘abduction’, ‘indirection’, and ‘intransitivity’ will be the modes of our walk. In large part, again, because the messy convolute is the way I have chosen to speak to myself, so to bring you along on that happenstance. It is the convolute as primary method-form of deliberation with which I actively test, chronicle, and reflect on ‘greenhouse’ to operate as its own specimen, prop, and medium, so to set its own spatialised deposition.

During the walk, I look to enact with you a kind of ‘splicing’ that constantly plays-off the tautology and contradictions of Global Warming. It is a way to cut the cut... to make a biopsy between the dialectical impasse of interior | exterior, particularly to ‘see’ the trauma, and to separate ‘greenhouse’ from its ‘superstructure’ [see c.((F)4)]. Splicing that binary, of juxtaposing a negative onto another, is the starting point to join you and I with other comrades and colleagues towards dismantling the toxic division of interiority | exteriority, to depose the ethnocentric fundaments of Western, colonial thought. I thereon look to the ‘deposition’ as a way to analyse the layers of definitions that allow to ‘see’ and interrogate the material encountered; to remove all that ‘greenhouse’ is when instrumentalised into its technoscientific state, one generating suppressive and homogenising power. Here is where I treat the compound term of ‘greenhouse superstructure’ as both pharmakon and as doppelgänger – as a strong signifier of binary impasse, of being both a problem and solution, and as both a ghost and a body.
The metaphorical double *splice* negates and separates ‘greenhouse’ from its industrial namesake ‘superstructure’ so to differentiate each other: less of a colonial-agricultural solution and building technology, more of a living technic and Marxian concept.

To *depose* ‘greenhouse’ is to more broadly and critically question its assumed definitions, about the roles ‘greenhouse’ particularly plays beyond technical and discursive environments. When contrasting such definitions with the components and convolutes of the dissertation, I begin to encounter figures and forms that oscillate between the concrete and the abstract as a kind of ‘non-local-site-specificity’… particularly as ‘superstructure’, ‘spectre’, ‘hyperobject’, ‘parastructure’, and ‘anarchive’. These concepts, which strongly suggest a lack of visual (or ethical) concreteness or clarity, are evaluated as potential modes of multi-perspectival perception. Eventually, as the walking, splicing, and deposing take their course, the *anarchive* (eventually translated from Spanish to delineate the form of the installation as *Anarquivo*) emerges as an end to evoke multiple beginnings: of forgetting (amnesia), of resisting (anarchy), and of recollecting (archive)... as an unlearning, relearning, and remediating our illness, to cope, to live with our super-repressed trauma, the one driven by the forces that destine us, messianically, towards Global Warming.

Before we move on, as I was describing the ‘walk’ as method-metaphor to speculate, through ‘abduction’, I also mentioned ‘indirection’ and ‘intransitivity’. Let me just say that these are not firm objects either, but two more elusive modes of object-relations that give thrust and gravity to the research, between the three components of the PhD; between the book, the journal, and the installation. I intuit that this triad has its best chance of being enlivened by the semiotic of the Peircean ‘index’, indicating *not* a homogenised sense of ‘greenhouse’, but a heterarchic deposition of its technology as a multiple array that points towards other alternative and diverse potentials.

Let us now visit and review ‘indirection’ through an excerpt of the *trialogue* I held with Howard Eiland and Patricia Bach [‘intransitivity’ will be visited at other moments through the convolutes, see c.(C)₁ & c.(D)₃].
METHODS OF INDICTION

Trialogue with Howard Eiland and Patrizia Bach about Walter Benjamin and translating *The Arcades Project.*  
[an excerpt]

PRETEXT

A ‘trialogue’ is a subset of the practice of relations called Threeing. Threeing was created in order to explore the impasses caused by binary and oppositional relations, and thus to interpret alternative ways of co-existing with our natural ecosystems. With that in mind, we, the actors in this trialogue below, Luis, Howard, and Patrizia wanted to approach our common discourse differently, say, to a recorded Q&A dialogue. Therefore, we feel that this triadic approach affords us an alternate chance to investigate, interpret, and relate each other’s respective practices, as co-existing ecosystems. At the core of our conversation is the voluntary desire to play the three different roles implied by Threeing; initiator (Luis), respondent (Howard), and mediator (Patrizia). Through this kind of role play we look to test a simple protocol based on the thrust of the question, answer, and interpretation format Threeing implies. And, by taking this conversation below as an initial trial, we look to explore and give body to the concerns of the trialogue—which are translation, interlinearity, and indirection—and how these acts, conditions, and methods, respectively, can be ‘actualised’ and drawn contemporaneously from Benjamin’s *Arcades* in order to share and enrich each other’s respective practices.
INTRODUCTION [excerpt]

In a 1930 letter, Benjamin deemed the *Arcades* “the theatre of all my struggles and all my ideas.” It had become for him—as it now perhaps becomes for us—a literary laboratory for testing (social, critical, spatial) ideas. In taking a similar inclination towards testing ideas through the ‘theatre’ of the *Arcades*, we here embark on a conversation as ‘translators’, looking to find alternative perspectives, paths, and recursions for our respective practices – physical and metaphorical.

**How do we meet?** On the 7th of December of 2015, by coincidence, Patrizia and Luis gave back-to-back presentations about our respective practices at a conference titled Walter Benjamin in Palestine: On the Place and Non-place of Radical Thought in Ramallah. The titles of each of our presentations were ‘Arcades-Work’ and ‘Reflecting on the Arcades’, respectively. Ever since then, given our also coincidental base-city of Berlin, we have maintained a friendship that gravitates around thoughts and findings about our processes regarding Benjamin. We suspect that our common interest (one that borders on obsession) lies in the desire to echo and learn from Benjamin’s voice, and if possible, to supplement the unfinished nature of *Das Passagen-Werk*.

To expand upon these curiosities and conversations, Luis travelled to meet Howard in Cambridge, Massachusetts on the 26th of October of 2016. Ever since that day, Howard and Luis have also been in a loose, ongoing conversation by way of intermittent emails and other correspondence. Our dialogue is mainly driven by an interview dynamic, where Luis looks to draw insights from Howard that may intensify the relevance of the *Arcades* in regards to Luis’s deposition and translation of ‘greenhouse’ as historiographic object and display. Through these exchanges, we’ve been engaging in disparate dialogues about the complex cosmos of history and of art that is Walter Benjamin. The exchanges have triggered various ‘indirections’, urging unforeseen aspects and encouraging further research into the *Arcades* that may translate and actualise ‘greenhouse’ as archetypal display structure and messianic indexical form…to what was the past, and is to become the future, of the natural sciences and their histories.
Ultimately, we are joined by the attitude to reactivate that ‘theatre-laboratory’. We do it as a way to talk to ourselves and to each other as methods for testing and intersecting our respective research, experimentations, and reflexions. It is now becoming for us a method of indirection that allows for the contrast between our respective works and procedures to complement the work of Benjamin as a form of iterative inquiry. That is how we may indirectly display and perceive the intransitive margins, languages, and perspectives that may make visible, epistemically, the multiple displays of the many worlds of our struggles and of our ideas. So, in full awareness of the impossibility of seeking Benjamin’s own guidance, we share with you the following conversation as a test, as an indirect ‘trialogue’ translated through Benjamin and his Arcades. May the indirections only continue.

TECHNICAL NOTE: The references to specific Convolutes and other materials in The Arcades Project (the convolute passages marked in brackets, i.e., [X#x,#], or by <X°,#> in the first Sketches, or by pg.# in the Exposés and other addenda) are all drawn from the 1999 edition by Harvard University Press. We do not feel it is necessary to search and read each passage, but we surely encourage you the reader to do so.

[excerpt from SET 1: Questions sent to Eiland 2016-11-24 06:02, Response received on 2017-01-06 00:25]

2. Luis: When we talked briefly about the term ‘interlinear’ that appears in Benjamin’s “Task of the Translator” I mentioned this passage…

“Where the literal quality of the text takes part directly, without any mediating sense, in true language, in the Truth, or in doctrine [Lehre], this text is unconditionally translatable. To be sure, such translation no longer serves the cause of the text, but rather works in the interest of languages. This case demands boundless confidence in the translation, so that just as language and revelation are joined without tension in the original, the translation must unite literalness with freedom in the shape of an interlinear version. For to some degree, all great texts contain their potential translation between the lines; this is true above all of sacred writings. The interlinear version of the Scriptures is the prototype or ideal of all translation.”
...would you comment on his use of the term?

Howard: You ask about the term ‘interlinear’ as deployed at the end of “The Task of the Translator” Benjamin, as you know, is talking here about ‘translatability’ as a quality distinguishing literary texts: the ‘higher the level of the work,’ the more translatable—that is, the more amenable to “einer formvollen Übersetzung,” one formally or literarily distinguished. Newspaper stories, bare statements of content, are not suitable for the art of translation. A work must have within itself, within its form and content, the potential for renewal in order to be truly translatable; a translation, Benjamin says, constitutes an afterlife of the work itself, which is to say, the work’s rebirth and transformation in a new historical context. Thus the concluding sentences of the ‘Translation’ essay: “all great texts contain their potential [virtuelle!] translation between the lines…” (But what exactly does “between the lines” mean here?) And then the observation about the interlinear versions of “sacred writings” as the Urbild or ideal of all translation. This observation would go together, I think, with the emphasis on “words rather than sentences [as] the primary element of the translator,” since the interlinear version usually follows the word-order of the original rather than the syntactic logic of the translator’s language. But it’s interesting that Benjamin affirms the unity of “literalness and freedom” in the form (Gestalt) of the interlinear version.

In our conversation at the Harvard Coop, I was stressing something similar in regard to my own translation practice: the attempt to mime, to stay as close as possible to, the syntax and diction of the original while remaining at all times attuned to English idiom. The hope was by this means to expand the resources of my own language in something of the way Benjamin describes in his essay. One doesn’t want the result to sound like a translation, but it should nevertheless reflect something of the character, the flavor, the feel, of the foreign language that is its source. What Benjamin invokes as formvolle translation depends, I believe, on this rigorous free play with idiom, on this ear for idiomticity and the possibilities of transformation within the boundaries and rhythms of the idiomatic, boundaries no doubt fluid in some indeterminate degree.
Patrizia: Z#93: [N1, 3] method of composition...how everything one is thinking at specific moment in time must at all cost be incorporated into the project then at hand...And, Z#150: [B3a, 1] fashions are bizarre and common, simple and full of fantasy
3. Luis: I mentioned that I am working on the discourses of climate change, and specifically in regards to my critical work on ‘greenhouse’, as manifold term. When I shared this with you, you quickly directed me to convolute [W] on Fourier (pgs. 620-650)... What aspect of this convolute do you feel relates so closely to climate change and ‘greenhouse’? Do you interpret Benjamin as foreseeing ‘climate change’ directly, as a context that would affect his approach to natural history?

Howard: Benjamin’s take on Charles Fourier and the “phalansterian philosophy” is summarized, in *The Arcades Project*, in the opening section of the “Exposé of 1935” (pp. 4-5) and in convolute passages [W7,4] and [W8a,5] in particular. The Fourierist propagation of phalansteries, as experiments in the merger of civilization (technology) and nature, is taken (despite Fourier’s blatant anti-Semitism) as a model of social revolution, which Benjamin conceives here in terms of the innervation of the “technical organs of the collective” (terms which recall his “Surrealism” essay of 1929). This is for him a political-educational conception, and thus he emphasizes Fourier’s pedagogic ideas (for example, in [W8,1] and [W16,6]) together with Fourier’s ideas about town planning ([W17,3] and p. 3: “city of arcades”). I would say that the closest Benjamin comes in this text to foreseeing any planetary climate change is when he touches on Fourier’s extravagant cosmic-utopian visions, which he compares to the satires of Grandville. See, for example, [W1a]. Fourier was a relatively early fantasist of a world in which the earth’s weather has been entirely tamed, that is to say, a world in which technology and nature, spirituality and animality, are everywhere happily married under the architectural and natural (celestial) vaulting of the arcade. The point of departure for the Fourierist utopia was a critique of the amorality and false morality of the business world, but Benjamin suggests that the “secret cue” for these imaginings was really the advent of the machine age. With his longstanding imagination of catastrophe, and his experience of the rise of the police state in the modern technologized metropolis, he probably would not have been surprised about the current perilous state of the environment.
Patrizia: Z#151 & Z#152: [G16, 3] Grandville’s masking of nature with the fashions of mid-century △ +
4. Luis: Is there is any merit to adding convolutes to the Arcades? Has anyone tried to formally do this already?

Howard: *The Arcades Project* is clearly unfinished. Indeed, at one point in the text [m2,1], Benjamin refers to the “fundamentally unfinishable collection of things worth knowing” as having its prototype in “study”—no doubt a kind of oblique reflection on his own grand collection and endlessly sprawling study that is *the Arcades Project* itself. But I would also adduce here the argument Agamben has made in introducing his new edition of Benjamin’s *Baudelaire* book, which is itself an offshoot of the *Arcades*. The familiar editorial distinction between completed work and incomplete work becomes problematic in Benjamin’s case, Agamben argues, and especially where a posthumously published work like *the Arcades Project* is concerned, a work in which we find an “intimate interpenetration of documentation and construction,” resulting in a kind of “hybrid of material and form, research and draft [Forschung und Darstellung], reading and writing”. The hybrid form in itself (in this case, citation plus commentary and reflection) might well serve as a model for other critical-creative projects, though I can’t think of any actual examples (parts of Roberto Calasso’s *The Ruin of Kasch*? Sebald’s novels? Performance art like that of the Chicago-based “Goat Island” group? Perhaps your own work?). There is certainly much evident opportunity for following-up on Benjamin’s research in the *Arcades*, for exploring and further contextualizing the materials he cites and tracing the manifold connections. But I can’t really imagine anyone adding to Benjamin’s *sui generis* text itself, except perhaps in the form of scholarly supplements or clarifications in a critical-historical edition.

[excerpt from SET 2: Questions sent 2017-09-15 13:08, Response received on 2017-09-23 01:03]

5. Luis: Where would Benjamin best describe his reasons for choosing the arcades as a historiographical object?

Howard: I think you are right to emphasize the historiographic context. Of course, one can point to various factors, including the influence of Simmel’s, Kracauer’s, and Hessel’s approaches to the phenomena of the modern metropolis, and Hessel’s observations of street life in particular. Benjamin himself, in the Arcades [N2a,4], stresses the historiographic context in adducing the connection of the Arcades text to the Trauerspiel book [Benjamin’s post-doctoral thesis] and its concept of origin, Ursprung. The latter is clearly distinguished from simple genesis (Entstehung), insofar as the origin is not a discrete starting point that is then left behind but rather is understood to encompass an extended process of genesis, development, and obsolescence. This is the historical “eddy” discussed at the beginning of the Trauerspiel book, the interplay of fore- and after-history, Vor- und Nachgeschichte, that constitutes a dialectical image—dialectical because referencing both past and present. The dialectical image is an historical “force field” [N7a,1], the site of confrontation and mutual tension. Thus the image of the arcade, for Benjamin, comprehends a century-long historical process, what he thinks of as reflecting the decline of the bourgeois class. In its seedy, phantasmagorical obsolescence, at the end of the nineteenth century, as you know, the Paris arcade is characteristically home to fortune-tellers, streetwalkers, detective agencies, and the like, as opposed to the
ultra-luxurious shops of the beginning of the century. At any moment in this long history, one may light upon an image (say, the image of a greenhouse) wherein what has been comes together with concerns of the historian’s own present day to form a “constellation,” that whereby the dialectical process of historical origin (in this case, the “origin” of the arcade) comes to a dynamic standstill.

**Patrizia:** [Z#28] The arcade is a street of lascivious commerce only; it is wholly adapted to arousing desires. Because in this street the juices slow to a standstill, the commodity proliferates along the margins and enters into fantastic combinations, like the tissue in tumors.

**Howard (cont.):** And what might be the resultant of this sudden interpenetration of a moment from the past by the historian’s now? What, if not, in this case, the image of our own world as “green house”? Conceived in this way, of course, it is an image of the subsumption of nature in history, or what Benjamin likes to call ‘natural history’: which, as you indicate, is always a story of precursors and afterlives. At every new reading, the image is born again: the historical evidence presents itself to the historical materialist “always anew, never in the same way” [N7a, 1].
6. Luis: In your response about interlinearity, you point to the ‘afterlife’ of the text, specifically as a “potential for renewal”. I think his idea of this potential seems to take a tinge of unwitting positivism, if Benjamin seems to accept Marx’s privileging of labour (interior) over nature (exterior). This reads to me as though there is an assumption that natural resources are a constant-given (or even a standing reserve, \([\text{Bestand}]\), per Heidegger) in order to assure human synthesis as nature-making; a prevalent characteristic of positivism, if not of colonialism. Does Benjamin offer resistance against such potentially positivist instrumentalisations of his dialectical image?

Howard: So much for the spatiotemporal physicality of the arcade that you ask about… I’ll take a stab at responding by pointing further to [J75,2], where Benjamin turns to Fourier in the context of Baudelaire briefly to discuss “the labor process in its relation to nature.” In expounding the Fourierist idea of play as the canon of a labor no longer rooted in exploitation, he introduces the image of a world inn – “the image of an earth on which every place has become an inn.” He invokes the double meaning of the word \(Wirtschaft\) in imagining an earth cultivated according to such an image: “all places are worked by human hands, made useful and beautiful thereby; all, however, stand, like a roadside inn, open to all.” The distinction between nature and labor is transcended here along with the distinction between act and dream.

You ask whether Benjamin regards nature as a constant given, acknowledging the difficulty and uncertainty of this matter. It’s a great question. Let me point to [K3a,2] as a possible way into this matter. Here Benjamin mentions “the dialectical essence of technology.” On the one hand, he refers to the “new worlds of form” that have arisen, without our doing, in the new physics, in mechanics and machine construction, in film, and, he says, have subjugated us; he wonders when and how such forms, or those arising from them, will reveal themselves as “natural forms.” On the other hand, he affirms another impulse “living” in technology, an impulse to emancipate oneself from nature and “master” it by bringing
about objectives “strange to nature.” So I don’t think one can fairly accuse WB of favoring the interior over the exterior. The whole thrust of the arcade image, as you otherwise indicate, is to overcome the opposition of interior and exterior, room and street, dream and waking life. Compare [N1,1] through [N1,3] on the “intervals of reflection,” involving a turning “intensively to the outside,” and on the “differentials of time” which guide his philosophical-historical “sea voyage.”

I would say that, in the highly paradoxical Benjaminian logic, there is ultimately a sort of complementarity between objectivity and metaphoricity. Because of the express priority of language, metaphoricity is infinitely extended, as in Nietzsche and Derrida (cf. also Benjamin’s comments on Kafka’s attempts to “metamorphize life into scripture,” in his famous letter of August 11, 1934, to Scholem); all concept is infected by metaphor, beginning with the concept of con-cept (what is “grasped together”). To the common sense that distinguishes language as an instrument from things as objects, it is merely a metaphor to say that a work of art has a life and an afterlife. But Benjamin means it literally. The work has an objective life and afterlife that develop through history in the form of translation, criticism, and other art: the form of tradition. The commonsensical dualism that undergirds both the conventional understanding of metaphor and the conventional understanding of object has ostensibly been transcended in this extension of the meaning of “life,” in this oceanic art and philosophy. But the need for constant vigilance against the atomization and instrumentalisation of things is thereby in no way diminished; it is surely the beginning of “effective resistance.”

10. Luis: In the ‘Translator’s Introduction’ to the Trauer-spiel book, you also seem to point to a type of inference that Benjamin looks to attain, as a critical methodology (‘Methode ist Umweg!’), one that he distinguishes from “the seamless deductive connectivity of science.” Is this ambiguity of inference the ‘weak messianic power’ Benjamin looks to bestow upon ‘his’ ideal historiographer23, one I would interpret as a type of nature-maker?

23 see Tiedemann’s essay ‘Dialectics at a Standstill’ (The Arcades Project) 944.
Howard: Yes, as you indicated in our previous conversation, “Bestand” is a key term in later Heidegger, used, in connection with the concept of “Gestell” or “Ge-Stell,” (The Question Concerning Technology, ibid) in reference to the standing reserve or collective resources of the totally mobilized technologized world. Now, Gershom Scholem, you remember, who was no simple-minded rationalist, and who at least early on propounded—with Walter Benjamin—a theological anarchism, accused Benjamin, in letters later on, of ambiguity-mongering. But surely a recognition of fundamental ambiguity and ineluctable aporia, if not exactly of total chaos, is crucial to any real sense of the historical significance of modern life. Method requires indirection, to paraphrase the trauerspiel Hamlet, and at times, it would seem requires even “equivocation.” A science of breaks, or cuts (Derrida), or lightning flashes [N1], rather than seamless connectivity. Method as montage. What Benjamin characterizes as the “weak messianic power” is, as you know, a function of historical time; it bespeaks the mysterious but legible “claim” which the past has on each present generation, along with the receptivity to the deep, slumbering and bubbling past with which the present as such is “endowed” (and that, I should think, is where the “nature-making” comes in). There is a persistent, constantly renewed and varied dialectic here, as in Heidegger (leaving aside their politics or “metapolitics” for the moment, one can see both men, I was suggesting, for all their differences, as revolutionary heirs of the Neokantian tradition)—a dialectic of nature and culture, givenness and agency, physis and technē.

The full Trialogue is currently under review by the Journal of Artistic Research. For more information, go to the Intransitive Journal [http://www.intransitivejournal.org]

24 See Shakespeare’s Hamlet V.i.139-140: “We must speak by the card, or equivocation will undo us” (Hamlet). Also II.i.66: “By indirections find directions out” (Polonius).
Die Ware / Commodity
Nouveauté / Novelty
der Flaneur und die Menge / The Flaneur and the Crowd
Jugendstil
Literarischer Markt / Literary Market
ennui
Politische Reaktion / Political Reaction
Anschauung des Organischen / View of the Organic
Ewige Wiederkunft / Eternal Return
Aesthetische Passion / Aesthetic Passion
Pariser Antike / Antique Paris
Physiognomisches / Physiognomic
Heros
Melancholie / Melancholy
Allegorie / Allegory
Chthonisches Paris / Chthonic Paris
Rebell und Spitzel / Rebel and Snitch
Fortschritt / Progress
Perte d’auréole / Loss of Halo
Spleen
Sensitive Anlage / Sensitive Disposition
Rezption / Reception [1]
Gautier-Note l’art pour l’art
Lesbos
Dante-Note Physiognomie der Hölle / physiognomy of hell
Tradition
Rezption / Reception [2]
die Dirne / Harlot
dandy
Rettung / Rescue

The marks are listed in the order of their appearance in the original manuscripts. Their depiction is a digital interpretation by Patrizia Bach. Translated into English by Patrizia Bach and Sam Dolbear.
**Patrizia:** Methode ist Umweg [B10,1]

### CREDITS FOR PICTURES

Patrizia Bach: Passagen-Arbeit, since 2012  
All drawings: crayon or pencil on paper, 22 x 28 cm (like Walter Benjamin’s manuscript pages)

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SPECULARIUM
AT VILLA JOVIS
SPECULARIUM AT VILLA JOVIS...

ABSTRACT:
The following convolute is dedicated to the *Specularium*, an archaeological site in Capri, found within the imperial complex of Villa Jovis, considered to be where the first greenhouse was installed. I read it to be a prototype to modern technology, as it represents what became the framework to virtually conserve (past) and/or to force (future) plant and animal growth, regardless of season.

I contend that such capacity, eventually and reflexively, comes to embolden the toxic, colonial drives of modernity and industrialisation.

Through the following pages you will find references to the claims of it being the site and object of that proto-technology, marked by my on-site residency in Capri as research activity for the PhD. You will also find some deliberations on what it metaphorically represents to the tone of the PhD as a whole, and what I think it may mean to the timeline of the Anthropocene as geological epoch.
An origin to the Anthropocene?

When deciding to question ‘greenhouse’ as a manifold of Global Warming, it becomes necessary to look at the construction of its history. Its known technological origins point to the Mediterranean island of Capri, to an area of the archaeological site called the ‘Specularium’ (ca.30 CE) set on the grounds of the imperial Villa Jovis. I found its mere name to be duly provocative. I decided to appropriate it as title to the installation Earthscore Specularium which took place early-on in the process of the doctoral work in 2015. It has thereon grown to become the methodological thrust of my research and experimentation. We will revisit that material elsewhere. But, let me first bring you to one of the last phases of my research. On the spring of 2019, I travelled to Capri to reside at Villa San Michele of the Swedish Axel Munthe Institute in order to visit the site of Specularium located on the immediate south-west area of the Villa Jovis archaeological site, and to explore any available reference materials.

After my initial investigation of archival printed matter and on-site, I am still unable to determine its exact function. That said, I arrived at two compelling but inconclusive threads: one that suggests it was the first ‘greenhouse’ hosting a medicinal garden; the other, that it was a towering astrological observatory. From these separate narratives, I contend that the Specularium was actually both. It is the first documented ‘greenhouse’ (as a medicinal garden), and it is, also, an astrological observatory. I draw this conjugation from considering several factors. For instance, there is consensus that several ancient civilisations that evolved during the Neolithic Revolution, as ‘first societies’ dating back as far as 12,000 BCE, may have been already influenced by deistic dialogues with the sun, the moon, and the stars.\(^\text{25}\) Such dialogues would take place in order to make decisions related to the cultivation of plants and of animals. These tendencies of course entwined these deistic dialogues into long-lasting languages between the heavens and the earth found in later societies across hemispheres, demarcating the beginnings of agriculture, later

becoming ‘husbandry’ (considered the second practice, after hunting). But, those seemingly-arcane languages still-today remain observed by many – from still-living indigenous societies, to permacultural and agro-ecological gardeners and farmers – for sowing and harvesting crops, as well as for other related activities such as ploughing, pruning, and enriching of their soils. These observed rituals that entwined spiritual and medicinal beliefs based on the relations between earthly and celestial patterns eventually come to become bisected into two camps: astronomy and astrology. And, although since the Scientific Revolution of the 16th century there has been an antagonistic relation between these two ‘practices’, many consider that gardening and agriculture somehow adjoin these two ‘worlds’ that are thought of as science and mysticism, respectively. The adjoining of these two practices still occurred during the Middle Ages in the design, planting, and rituals surrounding medicinal gardens, mainly in monasteries and in the initial horticultural gardens still preserved across Europe, many of which closely interlinked astronomical and astrological conditions.

When finding that the Specularium was a part of the imperial residence of Tiberius, it is difficult not to see its relation to the medieval medicinal garden. Villa Jovis was not just infamous for being Tiberius’ palace of debauchery, but also for the massive, self-sufficient complex it housed, which served as the centre of power to him as Emperor. Because of the island condition, all buildings in Capri, which until very recently had no access to potable water (a pipeline from Sorrento was installed in 1978), required their own water systems. In the case of Villa Jovis, the entire structure was built, first and foremost, to serve as a vast system of cisterns and aqueducts, where the containment and movement of water was perhaps its most important feature. Perhaps, as per the analysis of Rousseau’s *Social Contract* by Jonathan Bennett, Villa Jovis became the last centre of Roman ‘tyranny’, given that Tiberius resided there full-time during the last ten years of his reign, marking the final contraction and descent of the Roman state. From that point until the 19th century, Villa Jovis lay buried and forgotten, and was finally fully unearthed between 1932-35. After nearly two thousand years, Amedeo

Breathtaking Greenhouse Parastructures

(Fig. 14) Site Plan of Villa Jovis drawing by Amedeo Maiuri ca. 1940. Source Biblioteca Centro Cerio, Capri.
Maiuri (1886-1963), arguably amongst the most important archaeologists of the 20th century, identified, analysed, and re-projected Villa Jovis.

![Villa Jovis](image)

*Fig. 15* View over the site of the Specularium from the south promenade of Villa Jovis, 2019. Source photo: Berríos-Negrón.

So far, the materials I have encountered are the documents from various excavations and investigations that have taken place after the initial work by Maiuri, particularly his own speculative plans and illustrations that were eventually drawn from the findings at the site of the Villa.\(^{28}\) The more prevalent of these are the site-plans rendered by Maiuri himself from his nine expeditions to Capri between 1931-56. Aside from much more recent analyses and drawn projections made as recently as 2003 by German archæologist Clemens Krause, Maiuri’s drawings are still the only ones to include the Specularium on the site. It even appears, somewhat enigmatically, not directly connected to the villa (even drawn with a large, question mark in parentheses, the uncertainty in a little greenhouse of its own).\(^{29}\)

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During my residency on Capri, visits to the Ignazio Cerio Archive, the National Library of Napoli, and the Axel Munthe Library provided much of the material here referenced (although admittedly a far more extensive investigation will be necessary of Napoli’s libraries and archives). But before continuing with those materials specific to Villa Jovis, and with that bracketed question mark in mind, let’s digress for a moment and offer you a small scaffold of terms from various definitions related to the ‘specularium’ drawn from their use in Italian and in Latin. I found these during the research visits to those institutions aforementioned, and with them I hope to enrich our engagement by unpacking the discursive significance this curious term may present, and represent.

From the *Vocabulario Illustrato della Lingua Italiana*: ³⁰

`speculum...` ‘is an instrument that penetrates through an orifice in order to visually explore natural cavities’;

`speculare...` ‘to observe; related to mirror; a normal image projected by a mirror reflection; polished surface provides a mirror-like effect and translucence; the typewriter’s effect of a typeface striking the steno ribbon, leaving the letter’s imprint; to investigate by way of thought, in

a philosophical, theoretical character; to explore by observing from the top; to seek a strong profit from a financial or commercial operation; an activity absent of moral or ethical scruples for individual gain or personal advantage; in politics or journalism, to benefit from portraying a situation in a deformed manner to diminish its importance’;

speculària… ‘genus of plants in the Campalunacae family; it is of cosmopolitan distribution (of wide biogeography, at most latitudes, found on every continent except Antarctica); this genus includes edible vegetables and medicinal herbs.’

And, from the Dizionario della Lingua Latina Italiano-Latino: 31

specolare… ‘of the mirror, the ratio, re. hypothesis of the mirror’;

pietra specolare… ‘lapis (transparent selenite, mica, gypsum, ‘moon stone’, ‘selene’, Gr.), used as window material in ancient times’;

specularia… ‘glass glazing for greenhouse… (serre, Fr.)’.

I would like to add three more terms of my own definition, which I have already, and will continue to use. These are:

Reflection, reflexion, and reflex…

As far as ‘reflection’, it is here used in the sense that is aforementioned, as material and light, of shining from and/or through a surface, and of mirroring, of the moment when one can physically see a semblance of oneself or of some other recognisable entity.

[FIND SOURCES OF DEFINITIONS AT THE INDEX OF TERMS pp.755]

As far as ‘reflexion’ (which is the arcane spelling of reflection), I am referring to the acts – whether in written or spoken word, or even as the embodiment of a physical demonstration (say, a painting, sculpture, performance, or spatial projection) – that shape an introspection, interpenetration, and translation about some thing, phenomena, or event that is to be perceived. That definition is here emphasised to refer to acts in which artworks result of, as reflexive approaches, to research methods; as core methodology I would argue reflexion is continuously present in my own modes of production, no less on the one we are engaging now at this very moment.

And, as far as ‘reflex’, I am referring to actions that are either self-reinforcing (not unlike tautologies), or that have become, over time, involuntary or automatized. In that sense, I tend to refer to our ‘drives’ as the instinctive or involuntary reflex behaviours propped by unsatisfied urges and needs.

With that in mind, let’s speculate and reflect upon the specularium. Again, so far, I have found that there are two fairly remarkable, diverging narratives about what the Specularium may have been.
One is:

‘The *Princeps*, Tiberius, is pondering the future of the Empire. He pauses to meditate. Large mural paintings stare back at their emperor. A few quick strides take him out on the promenade, a short staircase leads him up to the *specularium*. There with his official court astrologer, Thrasyllus, the emperor, serious and silent, gazes far away into the starry heavens and finds peace, finds the confirmation of a decision taken, finds the key to the future.’  

The other is:

‘In the first century CE, two Roman agricultural writers, Lucius Junius Moderatus Columella and Gaius Plinius Secundus (Pliny the Elder), referred to proto-greenhouses (*specularia*) constructed for the Emperor Tiberius (42 BCE–37 CE), presumably adjacent to his palace, the Villa Jovis on the isle of Capri […] Pliny wrote (Book 19, 23: 64) that the *specularia* consisted of beds mounted on wheels which they moved out into the sun and then on wintry days withdrew under the cover of frames glazed with transparent stone (*lapis specularis* or mica) […] to grow fruits and vegetables for the Emperor daily medicinal needs and appetite.’

The first quotation offers the ‘standard’ archaeological understanding of the function of the *Specularium*. Despite his own, admitted uncertainty – “Non è facile dar ragione…” [trans. *It is not easy to give a reason for this gigantic ruin that is disconnected from the Villa…*], Maiuri deduced that the thick, ‘homogeneous’ walls of the ruin point to it being the massive foundation to a very tall structure. While discarding the possibility of it serving as a lighthouse (he had already identified a similar, massive foundation that already held a lighthouse structure on the northeast side of

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the site), Maiuri considers that this ruin on the southwestern side of the site might be instead an enormous statue of Tiberius, or of Augustus, given that the location would prominently announce the Villa to those arriving by ship onto the port of Capri. That said, Maiuri delicately moves to suggest that the Specularium may have held another function. Just as stated by Walter Hayes, Maiuri sees Tiberius’ intense ‘morbid mania’ over his health-as-future by way of his known dependence to the court’s astrologer (and healer) Thrasyllus. Because of this, Maiuri does then speculate that this massive ruin may have served as foundation to a towering celestial observatory. This account has been reified, and reiterated in various ensuing texts of archaeology, as well as in the prevailing contemporary description offered today to the public at Villa Jovis. Namely, that this was a place, recessed from the Villa, where Tiberius and Thrasyllus alone looked upon the Mediterranean skies for astrological signs about the future of his empire, which invariably included looking for astrological signs about how his own health would fare.

The second narrative quoted above, by Paris and Janick, is constructed from four other ancient codices of agriculture and medicine: Pliny’s *Historia Naturalis* (Rackham 1950; Jones 1951), along with Dioscorides’ *De Materia Medica* (Gunther 1959; Beck 2005), Columella’s *De Re Rustica* (Ash 1941; Forster and Heffner 1955), and *Mishna* and *Tosefta* (Mechon Mamre 2008), the latter being compilations of scholarly commentaries on Jewish law taken from the same time period. The purpose of the research by Paris and Janick is not to determine the role of the Specularium as technology, but to ascertain what cucurbit varieties were being grown in the region, in this case, by using ‘specularia’ as proto-greenhouses. This passing comment about ‘specularia’, recovered and interpreted from codex by Paris and Janick, is what then opens possibilities for considering that the notion of medicinal gardens and their relation to astrology (as mysticism, or religion) was a singular function; a place where plant life, health, and the cosmos were distinguished and differentiated, but not severed from one-another. If one were to recognise that the life of medicinal gardens during the middle ages were quite literally intersected with astronomical readings and geometries, then it is a compelling possibility to adduce that the Specularium’s function was indeed to harness them all; greenhouse as virtual space, medicinal garden, and astrological observatory, singularly.
The seemingly divergent narrative of these three world-making functions seem to point strongly to a symptomatic reflex for dividing standard historical bias from archaeological bias. Such a binary incision thickens the strong Western, industrial paradigm. Suddenly, the Specularium is not just a possible paradigm to ‘greenhouse’ as technology, but it is also a paradigmatic trauma that splits, conceals, and glosses-over the resulting dissociation between life and Western humanity driven by industrial modernity; a mode of depersonalisation that has been forced upon our planet as the rupture of the object-relations between humans and the habitable environment. It is a potent sign of what is driving the technological history of ‘greenhouse’ to become the strong, divisive pharmakon it is…as the glassy, (dis)embodied, spectral paradigm of cure and disease to the entire Western historicising of natural history.

This kind of paradigm is more than just a mere prototechnology. It allows us to sense the turn, the extractive direction, taken towards the modernist objectification of the Other less-than-human world as standing-reserve. Specific to the Specularium, it strongly marks yet another key metaphorical moment where man, retrospectively, amputates himself as autogenic being so to demonise Eve [see c.(B).] as key instrument
to the messianic promise of Eden, so to dominate the cosmos by its bipolar split; i.e., Specularium as celestial observatory; Specularium as medicinal garden. This binary that I am trying to here reflect-upon with you, along this passage through the Specularium, does point to a legacy of ‘husbandry’ as the obvious set of technologies that drive our penchant for passive, and not so passive forms of colonial violence and domination (including the long, breathtaking history of racism and human slavery itself, which, of course precedes, and still, today, succeeds the Specularium). It is that clinical splitting that marks a more succinct physical pivot towards the dysfunctional development of human (white, North, Western) privilege still-operating in science; towards the kind of mastering that ultimately engenders the witting and unwitting limitations, if the reductive modernity that continues to diminish, the potential perspectives our modes of perception may provide.

For me, that pivot point, that turn, is geologically marked by the Specularium. It is physically and metaphorically signified by its own translucent and transparent surface that is used – in the most pervasive of ways – to control and reproduce ‘life’ out-of-season, fractured from environment. It does not simply curtain the moment where men fulfill their prepubescent fantasy to manipulate and control ecosystems. It also marks, physically, the yearning fetish for the illusion of virtual space. To be specific, what I mean by ‘virtual’ here is the illusory power and force to physically accelerate and decelerate the ‘time scale’ of nature, a force and power of geological scale that has undeniably fallen unto the hands of the most extremist forms of industry as privilege and carelessness.

Put in present-day terms, ‘greenhouse’ to me potently signifies the Zeitraum [as constellatory model of reality to the experience of time, see ‘messianic’ on p.152 of c.(G)₆] where the destining experience of anthropogenic time is manifested as the impending cataclysm of Global Warming. For instance, we find the banal and benevolent botanical garden greenhouse operating as the choice container to decelerate and ‘conserve’ what is left of our species (past). Likewise, we now find the ever expanding, breathtaking industrial greenhouse superstructure serving as extraterrestrial container to accelerate the production of crops and (future) space, to feed and profit from ‘food security’. This messianic role serves as the master paradigm to the most egregious conflict of interest… whether here on Earth, or on that infantile and reoccurring trend of escapism to other planets.
Ultimately, the paradigmatic genealogy of ‘greenhouse’ that you and I are here reflecting through the Roman Specularium presents itself to us a kind of healing, or (re)mediation of that violent destining of Global Warming. As a mode of art-as-research, not unlike as it was staged on Nonsphere XIII: Earthscore Specularium, 2015 [see REPORT... pp.97-129], we breach across the chronological timeline framing the Specularium and the industrial greenhouse superstructure so to breakdown and depose that messianic destiny of Global Warming. And it is the Specularium, in its manifest form as proto-greenhouse, boundary object, and
genealogical pedestal, that provides you and I the support from where to reflect-on and display-forth the forces undergirding the misogynist construction of the history of nature...to challenge the ensuing, disso-

clative, illusory, and toxic ‘thinking’ that is the spatiotemporal binary fracture of interiority | exteriority. As our glassy, translucent object of clinical incision, the Specularium operates as the spectre of a technosci-

cient premonition, one that comes back, again and again, to talk to us in present time about accelerated climate change. The Specularium, as ‘proto-greenhouse’, traverses the history of the division between inside and outside. And, it may be that which destabilises the core modus of modernity from pandering the hegemony of territories, while conceal-

ing the non-local and site-specific qualities of habitable space, devising the translocal condition you and I are here to interrupt.

The interventions constellated and concatenated by this doctoral work, through the paradigm of the Specularium, are not aimed to construct a perspective in history. They are instead aimed to shape an actual and virtu-

tal series of instantiations that thicken the illusory, modern emptiness of the densely violent surface and palimpsest that is ‘greenhouse’: the spectral impasse between humans and nature.

I therefore appropriate the Specularium as speculative support to offer you my personal and unscripted experience of the sensational realities I have encountered. These are, ostensibly, the possible futures where life is terminally reduced to capital by the promise made by the green-

house…a truly undesirable promise of an atmosphere and landscape otherwise becoming necessary not for life, but for survival; a toxic messianic march down the abyssal thinking of Global Warming. That is the ground from which I carefully propose the Specularium to be a par-

adigmatic departure point, or, at the very least, one of the core vectors of the Anthropocene as geological epoch.

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34 Boaventura de Sousa Santos states that "the abyssal lines drawn by the dominant abyssal thinking of our time through which both human and nonhuman realities existing on the other side of the line are made invisible or even actively produced as nonexistent. This results in the most radical forms of social exclusion." [...] "The archetypal dimension of the common heritage of humankind is that, long before it was formulated, this idea already represented the dialectics of communication between the parts and the whole at a moment in which the abyssal thinking underlying Western modernity and its colonialist constitution was still a problem rather than a solution. I refer to the Iberian School of the sixteenth century and its awareness that to divide the world into "this side of the line" and "the other side of the line" would bring about barbaric destruction." - Santos, Boaventura de Sousa. Epistemologies of the South: Justice against Epistemicide (Routledge, 2016) 95.
NONLOCAL SITESPECIFICITY
**ABSTRACT:**

Convolute $(F)_4$ is about breaking down the metaphor and technology of *greenhouse superstructures*. It is a primer for the deposition of ‘greenhouse’. In order to question how ‘greenhouse’ is situated historically and technologically, I will attempt to show you a brief etymology of the term, as well as a differentiation of the compound terms it supports - as the technic that defines the ‘effect,’ the ‘gas,’ and ultimately, its messianic form as ‘superstructure’. As we observe these fragments, you and I may be able to question how greenhouse continues to hold an illusory, duplicitous, and irreconcilable role:

- as archival container to the past and terminal container for the future of natural science and its history.

I will look to question how ‘greenhouse’ continues to defy physical and perceptual distance as a non-local manifold that, through its industrial development, fundamentally fosters the transgression of cultural, geographic and biological specificities. Our path will support you and I to counter-contrast the Western stranglehold with which science – through deeply colonial justifications – has held on to its primacy as singular form of perspectival objectivity.
bare life (n.) p.735 The reduction of life to biopolitics is one of the most significant efforts of Giorgio Agamben. He essentially looks to reproduce the homo sacer (or ‘sacred man’) as one who is reduced to a ‘bare life’ deprived of any rights. Agamben argues that laws have always assumed the authority to define zoe as ‘bare life’ – as opposed to bios, a ‘qualified life’ – by the state making an exclusive operation of life that imposes a loss of power over man’s own political voice. The power of law to actively separate political beings (as citizens) from ‘bare life’ (as bodies), in its ancient conception of politics, is that which must be transformed, via the State, into ‘good life’. In other words, bare life is excluded from the aims of the state, yet it is included, instrumentally, so that it transforms into ‘good life’. Sovereignty, then, conceived from ancient times, is the power that determines who is to be incorporated into the political body by means of the exclusion of what is to remain outside the political body – which is at the same time the source of that body’s composition. With that in mind, for Agamben, biopower instrumentalises the ‘bare lives’ of the citizens for its political calculations, a power that has existed since the beginnings of sovereignty in the West, since this structure of exclusion, as that which is exterior to life, is essential to the core concept of sovereignty.

greenhouse effect (n.) p.742 Svante Arrhenius opens his seminal essay, ‘On the Influence of Carbonic Acid in the Air’, by asking, ‘Is the mean temperature of the ground in any way influenced by the presence of heat-absorbing gases in the atmosphere? [Joseph] Fourier maintained that the atmosphere acts like the glass of a greenhouse, because it lets through the light rays of the sun but retains the dark rays from the ground.’ It is from this statement that we have forever continued to refer to the planetary warming effect of the atmosphere on Earth, and all other subset-metaphorical uses of the term, somewhat incorrectly [discussed on section The Greenhouse Manifold here on c.(F)₄], as the ‘greenhouse’ effect.
**hyperobjects (n.) p.743** Timothy Morton explains that ‘Hyperobjects have numerous properties in common. They are viscous, which means that they “stick” to beings that are involved with them. They are nonlocal; in other words, any “local manifestation” of a hyperobject is not directly the hyperobject. They involve profoundly different temporalities than the human-scale [as they] occupy a higher-dimensional space that results in their being invisible to humans for stretches of time.’

**greenhouse gases (n.) p.743** are gases that absorb and emit radiant energy within the thermal infrared range. Greenhouse gases make the greenhouse effect possible. The primary greenhouse gases in Earth's atmosphere are water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Without greenhouse gases, the average temperature of Earth's surface would be about -18 °C (0 °F), rather than the present average of 15 °C (59 °F). Human activities since the beginning of the Industrial Revolution (around 1750) have produced a 45% increase in the atmospheric concentration of carbon dioxide (CO2), from 280 ppm in 1750 to 406 ppm in early 2017. This increase has occurred despite the uptake of more than half of the emissions by various natural ‘sinks’, such as forests, wetlands, the oceans, etc., that are involved in the carbonic cycle. The vast majority of anthropogenic carbon dioxide emissions (i.e., emissions produced by human activities) come from combustion of fossil fuels, principally coal, oil, and natural gas, with additional contributions coming from deforestation, changes in land use, soil erosion and agriculture, which includes the significant impact that is produced by the feeding and maintaining of industrial animal livestock. Should greenhouse gas emissions continue at their rate in 2017, Global Warming could cause Earth’s surface temperature to exceed historical values as early as 2047, with potentially harmful effects on ecosystems, biodiversity and human livelihoods. At current emission rates, temperatures could increase by 2 °C, which the United Nations’ IPCC designated as the upper limit to avoid ‘dangerous’ levels, by 2036; levels which are foreseen to trigger the systemic destabilisation of the planet’s ‘ecosystem services’ (i.e., the ecosystems that allow for human and most non-human habitability) in ways we will be unable to adapt to or repair.
(Fig. 20) Scan of p. 155 from The Dialectics of Seeing by Susan Buck-Morss MIT Press 1991. Source: Buck-Morss / MIT Press.
global warming (n.) p.742 already in 1994 there was clarity as to how Global Warming is to impact future human, and non-human life, particularly from the perspective of industrial agriculture and 'food security'. Cynthia Rosenzweig, et al stated that - ‘In the coming decades, global agriculture faces the prospect of a changing climate, as well as the known challenge of continuing to feed the world's population, projected to double its present level of five billion by about the year 2060. The prospective climate change is global warming (with associated changes in hydrological regimes and other climatic variables) induced by the increasing concentration of radiatively active greenhouse gases. Climate change could have far-reaching effects on patterns of trade among nations, development, and food security. Despite technological advances such as improved crop varieties and irrigation systems, weather and climate are still key factors in agricultural productivity.’ I thus here refer to the unprecedented increase of average global temperature caused by human activity on Earth, primarily the increase of greenhouse radiative gases into the atmosphere. Such activity radically destabilises the patterns and chemistries of all other atmospheric and oceanic subsystems, leading to the mass extermination of animal and plant diversity itself, crucial for the habitability of the planet. The massive amount of data and wholly concluded scientific work squarely asserts that human activity is to be blamed for the growing onslaught. Such overarching, all-encompassing problem is transforming all basis of sensation and environment. Critically deposing and thoroughly understanding the manifold of 'greenhouse' must be a fundamental step towards adapting to those perceptual changes as a way to reducing our contrary impact on Earth.

greenhouse superstructure (n.) p.743 Johannes Max and Ulrich Schurr state that ‘Currently, horticultural growers experience the advent of new fields of greenhouse application, such as “energy producing greenhouses” (Nederhoff 2003, 2006; Bakker et al. 2006; Bakker 2009) the so-called “Biopharming,” the manipulation of greenhouse’s internal conditions aiming at stimulating or enhancing the biosynthesis (mostly secondary metabolites) of certain valuable ingredients such as pharmaceutically active agents in medical plants, or growing genetically modified organisms aiming at producing specific compounds such as raw materials for the chemical or pharmaceutical industry. The diversity of greenhouse superstructures and covering materials has also increased dramatically along with the expansion of greenhouse horticulture from temperate climate zones to the subtropics and tropics and the tremendous diver-
sification of the application fields for greenhouses. Continuously rising demands for technological improvements and specialization of application purposes are leading to a constantly growing number of new products offered on the markets. Such diversity is offering a wide range of services but a comprehensive overview of these materials and services is lacking.'

**geodesic (n./adj.) p.741** a curve representing the shortest path between two points on a surface. The term geodesic comes from geodesy, the science of measuring the size and shape of Earth. In the original sense, a geodesic was the shortest route between two points on the Earth's surface. For a spherical Earth, it is a segment of a great circle. The term became popularised with the invention of geodesic domes, as hemispherical thin-shell structure (lattice-shell) based on a geodesic polyhedron. The triangular elements of the dome are structurally rigid and distribute the static stress throughout the structure, making geodesic domes able to withstand very heavy loads for their size. Although not invented by Buckminster Fuller, he brought the domes to new levels of popularity. First sharpening the technique used in domes built after 1st World War, with the rarely acknowledged contribution of artists such as Kenneth Snelson at Black Mountain College in the late 1940s, Fuller went on to coin and patent the ‘geodesic dome’. While actively courting the military use of geodesic domes, Fuller also successfully ushered a wave of popularity in the late 1960s and early 1970s, as a global symbol of technology (for example with his Biosphère, the central pavilion to the Montreal World’s Fair of 1967), and as a housing system for the alternative and environmentally conscious 'hippie counterculture', particularly with those interested in leaving cities to create off-the-grid communes. Although communes as ideal and practice are alive and well, such projects like Drop City, that used the geodesic dome as symbol of efficiency and of a spherical one-ness with the globe, did not last. Over the years, geodesic domes were revealed to have many disadvantages. Perhaps the most ardent proponent of dome homes, Lloyd Kahn, who edited and co-authored the acclaimed construction manuals and political-environmental manifestos Domebook 1, Domebook 2, and Whole Earth Catalogue, became himself disillusioned with domes, calling them ‘smart but not wise’, not only for the challenges they create for standardised material economies, and due to impracticalities such as leaks, but also because they clearly are awkward when it comes to efficient spatial/vertical
distribution and coherent temperature control and ventilation.

**phalanstery (n.)** p.750 in the *Arcades Project*, the entire convolute \( W \) is dedicated to the early socialist Charles Fourier (not to be confused with the chemist and physicist abovementioned Joseph Fourier). To Benjamin, Fourier signified all the splendour and contradiction that the utopic project entailed, particularly in its relation to nature. In passage [W15a,1], Benjamin qua Engels remarks that ‘After 70,000 years comes the end of Harmony, in the form of a new period of civilization, in descending tendency, which once more will give way to “obscure limbs.”’ Thus, with Fourier, transience and happiness are closely linked. Engels observes: “Just as Kant introduced into natural science the idea of the ultimate destruction of the earth, Fourier introduced into historical science that of the ultimate destruction of the human race.’ With that in mind, the ‘phalanstery’ is here used, similarly as in the *Arcades*, as the place-holder and physical manifestation to all of Fourier’s ideals consummated into a type of building designed in the 19th century for a self-contained utopian community. Ideally consisting of 500–2000 people working together for mutual benefit, Fourier chose the name by combining the French word *phalange* (phalanx, the basic military unit in ancient Greece), with the word *monastère* (monastery). Fourier conceived of the *phalanstère* as an organized building designed to integrate urban and rural features. The structure of the *phalanstère* was composed of three parts: a central part and two lateral wings. The central part was designed for quiet activities. It included dining rooms, meeting rooms, libraries and studies. A lateral wing was designed for labour and noisy activities, such as carpentry, hammering and forging. It also housed children because they were considered noisy while playing. The other wing contained a caravansary, with ballrooms and halls for meetings with ‘foreigners’, who had to pay a fee in order to visit and meet the people of the Phalanx community. This income was meant to sustain the autonomous economy of the phalanstère. The phalanstère also included private apartments and many social halls. A social hall was defined by Fourier as a *seristère*. Though Fourier published several journals in Paris, among them *La Phalanstère*, he created no phalanstères in Europe due to a lack of financial support. Fourier believed that the traditional house was a place of exile and oppression of women. He believed gender roles could progress by being shaped within community, more than by pursuits of sexual freedom or other Simonian concepts.
site-specific (adj.) p.754 Kwon Miwon tells us that ‘Modernist art objects were transportable, nomadic, could only exist in the museum space and were the objects of the market and commodification. Since 1960 the artists were trying to find a way out of this situation, and thus drew attention to the site and the context around this site. The work of art was created in the site and could only exist and in such circumstances — it cannot be moved or changed. Site is a current location, which comprises a unique combination of physical elements: depth, length, weight, height, shape, walls, temperature. Works of art began to emerge from the walls of the museum and galleries (Daniel Buren, Within and Beyond the Frame, John Weber Gallery, New York, 1973), were created specifically for the museum and galleries (Hans Haacke, Condensation Cube, 1963–65), thus criticizing the museum as an institution that sets the rules for artists and viewers.’

nonlocal (adj.) p.747 George Musser explains that ‘In theoretical physics, quantum nonlocality is a characteristic of some measurements made at a microscopic level that contradict the assumptions of local realism found in classical mechanics. Despite consideration of hidden variables as a possible resolution of this contradiction, some aspects of entangled quantum states have been demonstrated irreproducible by any local hidden variable theory. This means, for instance, that the workings of gravity turn out to be sparkling with nonlocal phenomena.’

translocal (adj.) p.757 Boaventura de Sousa Santos explains that ‘Insurgent cosmopolitanism includes vast populations in the world that are not even sufficiently useful or skilled enough to “have chains,” that is, to be directly exploited by capital. It aims at uniting social groups on both a class and a non-class basis, the victims of exploitation as well as the victims of social exclusion, of sexual, ethnic, racist, and religious discrimination. For this reason, insurgent cosmopolitanism does not imply uniformity, a general theory of social emancipation and the collapse of differences, autonomies, and local identities. Giving equal weight to the principles of equality and the recognition of difference, insurgent cosmopolitanism is no more than a global emergence resulting from the fusion of local, progressive struggles with the aim of maximizing their emancipatory potential in loco (however defined) through translocal and local linkages.’

Later, at a crucial moment of his broader advocacy for new epistemologies, Sousa de Santos tells us that ‘The enabling contradictions called for in this book have been of two kinds. On the one hand, different ways of knowing call
for different forms of social agency, as well as for new grammars and objectives of social transformation. However, the need to intervene in translocal agendas, aggregate struggles, and the search for allies may call for some kind of cultural and epistemological hybridity, both as concerns what is to be done with whom and how to name it. I deal with intercultural translation in this book as a way of achieving this without compromising the cultural and political identity of the different social actors involved.'

**paramodular (adj.) p.748** in maths, it indicates a set function where a ‘supermodular’ group has a different, but closely related ‘submodular’ group that always satisfy their cross-inequality. With that, I turned to this term as a way to denominate a mediation between the power of new parametric, associative, and rapid fabrication technologies along with the efficiencies and material economies of modular solutions within today’s unpredictable cultural, social, environmental (say, paranormal) realities. The core concern of this mediation is to work cogently with the context of resource depletion and accelerated climate change. It was this approach that led me to produce the mobile curatorial infrastructures, such as my Turtle series (2005-14) and the Y-Table series (with Anxious Prop 2010-2013), as well as to develop the Parametric Greenhouse patent (2011), and to found the Berlin-based Paramodular environmental design group. The mission of Paramodular began as a project to lower the carbon footprint of greenhouses while increasing biodiversity and yield of social and agricultural production.

**individuation (n.) p.744** Bernard Stiegler explains that ‘This is the paradox of our time: mass individualism does not allow mass individuation. It is the strength of neoliberal governance technologies to have succeeded in depriving the individual of his/her individuation, in the very name of his/her individuality. Individualism is a general system of equivalence in which, each worth each, everything is equal; conversely, individuation engages a philosophy where nothing equals. Individualism responds to a logic in which the individual claims his/her share in the sharing of rights holders (sharing between peculiarities, between minorities); conversely, individuation responds to a philosophy that breaks this logic of identification, and for which there is no sharing that is not participation and participation that does not lead the individual to go beyond what s/he is sharing. It will be understood that individuation is not individualization - and individualization, in the sense that consumerist individualism understands it, is
unconscious ruse (of technology) (n.) p.757 Benjamin also tells us - ‘Whereas [first technology] made the maximum possible use of human beings, [second technology] reduces their use to a minimum. . . . The results of the former are valid once and for all (it deals with irreparable lapse or sacrificial death, which holds good for eternity). The results of the latter are wholly provisional (it operates by means of experiments and endlessly varied test procedures). The origin of the second technology lies at the point where, by an unconscious ruse, human beings first began to distance themselves from nature. It lies, in other words, in play.’

crisis of scale (n.) p.737 technologist and historian of science Reinhard Wendler explains that ‘In the 1960s, György Kepes warned radically: “Every magnitude has its own structure. If limits of scale are overrun, either a new level is reached or the old level collapses.” The danger of a collapse of the social order proceeds from the new dimensions of scientific and technological development: “Objects passing swiftly – motorcycles, aeroplanes, intercontinental rockets, orbiting capsules – weave a fast-growing net around us with patterns of speeds rising spirally.” Human beings fail to react to this exponential development by adapting their visualization models. “Concepts for a slower, tardier scale of existence have been given to us; they are more and more useless in the exploding developments of events.” In this way, says Kepes, the present and future created by humankind increasingly slip out of human control and design. Insisting on outdated views of the world and patterns of behaviour leads to a “crisis of scale;” to counter this Kepes suggests an expansion of visual skills: “New conditions challenge the idioms of our sensibility. A new situation forces us to develop an innovative vocabulary of vision. Today we are facing such a revision of the means of our vision.”

bioregionalism (n.) p.735 Peter Berg encourages us to think of bioregions as a political, cultural, economic, and ecological set of views based on defined surface areas on the planet. Bioregions largely withhold physical and environmental features, including watershed boundaries, soil, and terrain characteristics that primarily do not respond to national or privatised boundaries. That said, bioregionalism stresses that the determination of a bioregion is one that responds to culture, and
emphasizes local populations, knowledge, and solutions that go beyond human perspectives. Bioregions are not synonymous with ecoregions, as the latter are scientifically based and focused on non-human life, wildlife and vegetation. Bioregions, by contrast are human regions, informed by nature but with a social and political element. In this way, bioregionalism is just political localism with an ecological foundation.

fourth industrial revolution (n.) p.740 was first introduced by Klaus Schwab, the executive chairman of the World Economic Forum, in a 2015 article in the journal Foreign Affairs. Fourth industrial era technologies look to combine hardware, software, and biology (cyber-physical systems), emphasizing advances in communication and connectivity. Schwab expects this era to be marked by breakthroughs in robotics, artificial intelligence, nanotechnology, quantum computing, biotechnology, decentralized consensus, fifth-generation wireless technologies (5G), 3D printing, and fully autonomous vehicles.

sixth extinction (n.) p.754 Elizabeth Kolbert discusses this geological event in her book *The Sixth Extinction: An Unnatural History* (2014). Pertaining to the Anthropocene, the sixth extinction is occurring presently, and is one of the most significant extinction events in the history of the Earth. This extinction of species coincides with the current Holocene epoch already taking place for ca. 11,700 years, and at its centre we find human activity at present generating sufficient stress on the environment for itself be considered a force of geological scale [see Vernadsky and Dejardin and noösphere]. The extinctions span entire families of plants and animals, including mammals, birds, amphibians, reptiles and arthropods numbering individually in the millions (exponentially more at the microscopic scale). With widespread degradation of highly biodiverse habitats such as coral reefs and rainforests, as well as other areas, the vast majority of these extinctions are thought to be undocumented since, in many cases, either the species itself or the fact of its extinction is still undiscovered by the time its extinction takes place. The current rate of extinction of species is estimated at 100 to 1,000 times higher than natural background rates. The Global Assessment Report on Biodiversity and Ecosystem Services published by IPBES in 2019 posits that roughly one million known species of plants and animals are now facing extinction caused by anthropogenic impacts.
eleventh axiom of resilience (phr.) p.739 in Lawrence Vale's book The Resilient City, the conclusion is titled *Axioms of Resilience*. On it, he enumerates a series of passages regarding the qualities he considers to complement the ability for urban centres, and, to a certain extent, for societies to become resilient in the face of large scale disasters, man-made and natural. The 11th axiom reads - ‘Resilience, like disaster, is site-specific.’ I read this to mean that the events of a disaster not only have location, and that their impacts are shaped by the natural, geographic and socio-economic context of those locations, but that the way in which those who are victimized (human and non-human) by such traumatic episodes will experience both the disaster and the ensuing capacity to recover, as resilience, in very different ways. Therefore the way in which the disaster is made-visible, and negotiated will vary significantly, prompting the needs to create adaptable modes of analysis and engagement.

green new deal (phr.) p.742 is a proposed economic stimulus package that aims to address climate change and economic inequality in the United States. The name refers to the New Deal, a set of social and economic reforms and public works projects undertaken by President Franklin D. Roosevelt in response to the Great Depression in the 1930s. *The Green New Deal* combines Roosevelt's economic approach with modern ideas such as renewable energy and resource efficiency. The measure has been sponsored and championed by Puerto Rican Representative for New York State’s representative for the 14th district Alexandria Ocasio-Cortez. On March 25, 2019, the resolution failed to advance in the U.S. Senate in a margin of 0-57 (of 100), with most Senate Democrats voting ‘present’ in protest against the vote.

propædeutic (adj/adv./n.) p.752 is the term I would like to use to represent the spatial theories proposed by Brazilian architect, curator, and cultural producer Lina Bo Bardi. Bo Bardi practiced a highly hybridised form of art, curatorship, and architecture, many as forms of, and for, public pedagogy. Her – ironically – rejected application for a professorship in the Federal University of São Paulo in the 1950s was a 90-page pedagogical manifest titled Propædeutic Contribution to the Teaching of Architecture Theory (*Contribuição Propedêutica Ao Ensino Da Teoria Da Arquitetura*, 1957). Through it she expressed a variety of
positions that remained of crucial importance to her practices for making and challenging ideas of living and civic space, particularly in regards to the environment and education as physical, spatial middle-grounds. Not only did she make these ‘introductory’ provocations foundational to her theories and methods of spatial practice, but she deliberately pressed such notions against the inadequacies of industrial and technocratic trends driven by modernism’s penchant for ‘scientifism’. This was particularly crucial in her aggressive efforts to dismantle the exclusive privilege paid to ‘interior space’, striving always, somehow, toward dissolving the toxicity of interiority and exteriority in favour of what she defined as ‘total-space’ [also see c.(D)].

ecomonumental (adj.) p.739 in the book (or ‘shoebox archive’) titled Natural Artificial, Juan Herreros, et al describe that landscape and architecture simultaneously lose their respective traditions. The former ceases to be limited to nature as background, where all situations, urban or rural, are a place for intervention turning landscape wholly artificial. The latter loses its traditional geometries and artifices that traditionally separated it from landscape, turning towards a naturalist desire of forms and functions ushered largely by computer and parametric aided design. In that double movement, from nature to project and from project to nature, the entwinement of both turns into an ‘ecomonumental’ topography.

throwntogetherness (n.) p.756 Doreen Massey tell us that ‘Place, as an ever-shifting constellation of trajectories, poses the question of our throwntogetherness. In insisting in the importance of material place, the chance of space may set us down next to an unexpected neighbour. The multiplicity and the chance of space here in the constitution of place provide that inevitable contingency which underlies the necessity for the institution of the social and which, at a moment of antagonism, is revealed in particular fractures which pose the question of the political.’
How Far the Near has Become

‘A significant counter-example to the many historians and philosophers who neglect the containment aspect of technology is Martin Heidegger, who paid quite a lot of attention to location, things, spaces, containers, and technologies of holding and supply. His essay on “The Thing” [1971 (first published 1962)] begins with a discussion of nearness and distance in the modern age and includes wonderful meditations on a jug, some of which are relevant for a more general analysis of container technologies. First, Heidegger takes pains to argue that the jug for him is not a mere object of vision or thought, but a thing in itself which has been created through a process of making, so that “as a vessel [it] stands on its own as self-supporting”. The jug’s character as a thing “resides in its being qua vessel”, that is, its capacity as a container. Heidegger inquires into the holding function of the jug, arguing that it is not the impermeable sides and bottom of the jug which do the holding. When we fill, it we pour into its emptiness, and “The emptiness, the void, is what does the vessel’s holding. The empty space, the nothing of the jug, is what the jug is as holding vessel”. The maker of the jug does not so much shape the material as shape this void.’

Gathering momentum from Sofia’s analysis of container technologies, precisely to argue how ‘greenhouse’ suggest a special class of ‘container’, let’s revisit a paper I presented at the ‘Architecture of Resilience at the Human Scale’ conference organised by Sheffield University on the first year of my PhD work (11-13.sept.2015). The paper was titled Greenhouse Superstructures as Social Pedestals: displaying site-specific non-locality as a possible form of resilience. Being selected to present at this conference afforded me an early opportunity to publicly put forth, and gauge response against one of the core contentions of my PhD. The discussion on ‘resilience’ gave me an opportunity to begin to hone my initial ques-

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tions about the manifold of ‘greenhouse’ — technically, technologically, contradictorily, affirmatively, etc. — and how to position the research towards its focus on the display of infrastructural and environmental re-mediation. In this case, I started asking questions about the potent yet assumed capacity for ‘greenhouse’ to collapse bioregional and temporal ‘distances’ in the logic of the global-Imperial agricultural project: i.e., how does ‘greenhouse’ operate unassumedly as the original colonial instrument to sequester and transplant exotic biota (plant, animal, and human) to transpose their spaces and habitats across hemispheres; and how does this capacity still play a core role in the past, present, future perception and projection of Global Warming?

These questions arose from what, over time, became a scepticism about the (violent) physical manifold and (empty) metaphorical condition of ‘greenhouse’. Over time, as someone from the Caribbean tropics, the melancholic comfort and appeasement I felt when visiting the civic, botanical garden greenhouses of the global cities of the North soon changed into unsettling sensations of transgression… particularly when I started visiting industrial greenhouses.

Ironically, that suspicion was informed by an initial fascination with Buckminster Fuller’s geodesic domes. Just like many artists, engineers, and cultural producers, I was impressed by all the different disciplinary, environmental, and social intersections Fuller accomplished by working with maths, industrial design, engineering, and Earth sciences. And there was a particular appeal to the way Bucky revived Henry George’s Spaceship Earth metaphor, namely in order to champion the hippie and countercultural milieu while spending significant time at Black Mountain College — the groundbreaking art school secluded on the hills of rural North Carolina in the United States. Fuller’s legacy seemed to have been forever enshrined, for many valid reasons, as a vision based on the culture of geodesic ‘efficiency’ for sustaining the living habitability of a planet operating on a delicate and symbiotic homeostasis.36 Indeed, Fuller’s proposals were far more nuanced than my summary above, as I do still believe that his legacy must continue to be revised and revisited. But, in my own revision of Fuller, two things happened between 2005 and 2006.

First, while doing my masters, I participated in a workshop at M.I.T. given by architecture professor Mark Goulthorpe. The workshop, titled the *Sinthome Plastik Conditional*, was based on the digital-parametric design and fabrication of a sculpture Goulthorpe was commissioned to realise. His key collaborators were students (now influential figures in their respective fields) Barbara Cutler, Axel Killian, Emily Whiting, Phillippe Block, and Stephen Form, with participations by Sawako Kajima and Stalianos Dritsas, among others, who provided Goulthorpe with customised, groundbreaking digital/parametric applications and unconventional prototyping/fabrication use of tools to realise the structurally complex aesthetic shapes he desired. Influenced in no small measure by the funicular geodesics of Fuller, the application of Voronoi principles to fulfil Goulthorpe’s fascination with the concept of the Borromean knot, led to an iterative, self-generative form-finding application created mainly by Cutler and Killian that would find efficient (geodesic) solutions to structure almost any surface-shape input. Although the sculpture was never built, Goulthorpe’s drive (not unlike Fuller’s at Black Mountain) became a prolific mechanism for research, experimentation, and pedagogy that motivated the participants to produce those extraordinary approaches to

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parametric design (also known as associative design). The workshop ultimately yielded applicable research threads about high-tech approaches to traditional sculptural form-finding practices, and how these could open such techniques to the design and construction of buildings.

From a personal standpoint, I was amazed at the genius of the research, programming, engineering, design, and fabrication output. But very soon after, I became very concerned by how much more energy would be needed, and waste produced, by the mass application of such technologies to urban development. If applied under the logic of consumerism, it would exponentially increase an already alarming amount of toxicity produced by the building industry... even with Goulthorpe’s own effort to propose a general non-standardised approach for a more efficient material economy that the technologies could create (see the Non-standard Praxis Conference at MIT, 2005). I became heavily sceptical, for I could not see a genuine and coherent transition from existing modular building solutions to a strictly on-demand and environmentally conscious, 'mass-customised' extraction and production of raw materials for building. I was concerned that an unfettered access to parametric form-finding would only add petrol to the environmental dumpster fire being exacerbated by professionalist architects, real estate development speculators, and their construction industry (as it already contributes a destructive 40% of all GHG emissions). I became particularly concerned that such technologies would be instrumentalised, not towards delivering more precise relations with the environment, but instead towards the fulfilment of all the unfulfilled sculpturalisations that the ‘men in black’ of computer rendering-based architecture would want to erect. Of course, that is a generalisation that some might find offensive, but I feel confident that the market of iconic and ‘parametricist’ architecture that has spread only but confirms an overarching propensity for tone-deaf professionalist architecture that is further feeding the already toxic consumerist appetite at the scales of building and of city.

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The other thing that happened to me during that period, as I found myself in this ambivalent state of both techno-sculptural bewilderment and deep environmental concern, was that I encountered the essay *Acid Visions* by Felicity Scott (2006). Through the essay, Scott makes a succinct but nuanced critical analysis of Buckminster Fuller’s role in the ‘50s and ‘60s culture in North America, principally of the value of his geodesics as technology and how that culture transposed itself onto the ‘parametricist’ logic of architectural design. Scott takes an unusual, if unpopular position to carefully critique Fuller, questioning what he had bestowed upon the countercultural discourses of the time, and how the use of geodesics played out. She contrasts how Fuller, astutely, if shrewdly, played that untenable negotiation between catering to both the military establishment and anti-war communities, and how that contrast posited a quasi-religious, ‘oceanic’ embracing of Fuller’s geodesics as a constitutive, technocratic spirit towards life on Earth. Fuller’s overarching, all-encompassing geodesics did not quite manifest at the global scale in which he and his followers envisioned. That absence is exemplified by three manifested extremes, either by the burning Biosphère for the Montreal Expo of 1967

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(see Fig.1, p.16)... the infamous off-world, soon-abandoned commune of Drop City... or the gigantic testicular phallus erected to house the secret military intelligence facilities of NATO during the Cold War in Berlin (as I have said before, never underestimate the sense of humour of the U.S. military).

(Fig.23) Drop City, ca. 1967. Photo source: Clark Richert.

The techno-sculptural research and experimentation of Goulthorpe and the critical research and reflexive writing of Scott – along with the experiences I had already gained by working, not just from Paul Ryan and Jean Gardner, but for & with philosopher Stephen Perrella; photographer and filmmaker Larry Clark; conceptual artist Silvia Kolbowski; performance artist Joan Jonas; public artist Antoni Muntadas; interventionist Krzysztof Wodiczko; and architect Juan Herreros – provoked me to consider a practical question. Already with great concern about the unwitting impact (to use Scott's term) of Global Warming on geopolitics, material and labour economies, and on the life of less privileged regions, I asked: how can I test, observe, and interpret the new technologies for parametric form-finding in the context of such accelerating climate change and its ancillary violence of climate injustice?
Over time, my often-naive acts stemming from addressing the question were driven by committed observations about the ruptures between social and natural environments. I wondered, as subject-matter, about which 'object' could facilitate, comprehensively, how those acts of research as practise could dis-play such ruptures to yield affirmative environmental remediations. While considering the basic formal, spatial, and relational principles I aimed to investigate, it soon became clear that by instrumentalising a greenhouse (then) strictly as model and building technology, that it could serve effectively as both an obvious ‘mediator’ of man and environment, as well as a technology that was simple and (relatively) cheap to reproduce.

Ever since, I have been ‘playing’ with display as a form of interface, sculpture, and installation. Aside from exploring other display archetypes [such as the table, see c.(D)], the implementation of ‘greenhouse’ both physically and metaphorically evolved to become the focus object-relation, the container of my work. By taking three vectors – from the cultural, collective, and technoscientific extremes – I looked to find productive moments of intersection between them. These manifested sequentially, in large part as a series of installations titled Nonspheres [see LIST... pp.78-129], later followed and occurring in parallel with the founding of the art collective Anxious Prop, both of which emerged alongside the development of the patent titled Parametric Greenhouse [DE 102011108081 B4, 2011-15, see Fig.24 & BIBLIOGRAPHY]. The latter was developed with the environmental design group Paramodular, with the mission of testing and narrowcasting the accessibility to the patent in order to produce more materially and operationally efficient, biodiverse, democratic, and environmentally conscious industrial greenhouses. It was from those three vectors of practice that I began to turn these questions, from my independent and collective research practice, unto the doctoral qualification here before you. It is hereon that I look to question the role of ‘greenhouse’ as the Imperial embodiment itself of the collapse environmental and perceptual distance, as the historical technology of Global Warming.
The Greenhouse Manifold

I first want to tell you that what I learned from that decade of independent work is that ‘greenhouse’ is an opaque manifold of meanings. The opacity is not just the result of a layering that occurs when considering its many definitions. It is more so an opacity driven by the suppressed colonial violence that is implicit in its technological instrumentalisation as seemingly neutral surface-container. This type of mythical violence, of wilfully transplanting the exotic as colonial subject, is at the heart of all other compound terms and subsets of ‘greenhouse’. I have been working on how this opacity obscures a range of forces and privileges that shape our currently deficient environment. Moreover, in my general practice, I am exploring how these opaque forces affect, and may be perceived through the forms and languages of sculptural and spatial production beyond my own prescription of visual or imagined outcomes.

At present, we are caught between an alarming Sixth Extinction, an illusory Fourth Industrial Revolution, and a courageous but grossly
underrepresented Green New Deal (for the U.S. and its variation in the E.U.). Between them I find that the opacity of ‘greenhouse’ becomes most intense. It seems to be at its most intense when considering the history of the greenhouse where we find it to be at the root of all modern technological production, and thus in all technoscientific and geopolitical questioning of the environment.

At present time, despite the alarming rates of species loss and geo-chemical changes – which are clearly far outpacing our planet’s capacity to proportionately evolve and adjust to them – we instead witness a runaway addiction, if psychotic double-bind: both in our continuing indulgence of fossil-fuel behaviours, and in coaxing a global commodities market (for raw materials, fuels, agriculture, and meat) that is pushing to profiteer from Global Warming. If that is not the very definition of either sociopathic or of self-destructive depersonalisation, then I am not quite sure how to otherwise define it. It is here, at the juncture of that double-bind that I would like to start to tell you how I perceive the large-scale ways in which such depersonalised drive gains its power. I will do so indirectly by exploiting the term and technology of ‘greenhouse superstructures’, technically and metaphorically.

The greenhouse ‘effect’ hinges primarily on a capacity to conserve heat. This means that it is directly related to the principles of entropy.

Ironically, the analogy drawn between the effect created by a glass building (and its instrumentalisation as technic), and the scale of substances and circumstances that allow for the global ‘effect’ to take place is, at best disproportionate, and at worst, well, just plain wrong.41

French mathematician and physicist Joseph Fourier [(1768-1830), not to be confused with his contemporary philosopher and socialist thinker Charles Fourier (1772-1837), who we will address elsewhere], was the first to suggest the idea that the atmospheric systems of the Earth were responsible for the planet’s median temperatures, a claim appearing on his landmark report ‘On the Temperatures of the Terrestrial Sphere and

Interplanetary Space’ (1824). Considering the effects of incoming solar radiation, Fourier initially calculated that an object the size of the Earth at the same distance from the Sun should be considerably colder than the planet actually is. Between 1824 and ‘27, he proposed various possible sources for the additional observed heat. Among others, Fourier’s consideration of the possibility that the Earth's atmosphere might act as an insulator of some kind is widely recognised as the first proposal that initiated the vast study of this previously unknown meteorological phenomenon. And although the effect identified by Fourier was later fully quantified by Swedish physical chemist Svante Arrhenius in the 1896 paper ‘On the Influence of Carbonic Acid in the Air’, it was not until 1901, when Swedish meteorologist Nils Gustaf Ekholm, in an original but inaccurate analogy, coined the now ubiquitous term ‘greenhouse effect.’

In principle, the inaccuracy lies precisely in that a building is essentially a closed system, whereas the planet is an open system. The effect of such difference is that the building prevents the flow of air, allowing the objects and surfaces under the transparent and translucent roof structure to gain and retain heat, while at the planetary scale, the objects and surfaces in large part do the opposite by reflecting much of the heat, which in turn is either released into space or is trapped by the now commonly known greenhouse ‘gases’ (water vapour, CO₂, methane, etc.). This means that the planet’s atmosphere is not the same as the glassy envelop of the building, albeit the source of the effect in both is solar radiation as light and radiant heat. Therefore, the way a greenhouse retains heat is fundamentally different. A so-called ‘green’ house works by inducing heat absorption on the interior surfaces and objects, and then minimising airflow inside the structure to retain the heat. At the planetary scale, heat is retained by the massive complex of fluid and mechanical compositions of the atmosphere and oceans by retaining and distributing the radiative heat the gases accrue through thermal air and water flows.

The term ‘greenhouse’ appears in English in the early 1800s, and is preceded (related to different functions) by conservatory, hothouse, conservatory, hothouse,
palm-, lemon-, orange-, pineapple- and strawberryhouse, not to mention the orangerie and specularium well before, among others. It of course has many variations of meaning in different languages, such as ‘growth house’ (växthus - Swedish, væksthus - Danish, Gewächshaus - German); ‘forcing house’ (Treibhaus in Swiss-German); ‘winter-maker’ or ‘life-maker’ (invernadero or vivero - Spanish); ‘stove’ (estufa - Portuguese); and ‘gripping or closed space’ (serre - French). Today, with all these variations at play, from growing to forcing, and from gripping to oven, the internationalisation of ‘greenhouse’ as common denominator and causa-celebre has had far-reaching effects in galvanising the scientific consensus asserting that the Earth’s atmosphere is warmed by absorbing infrared thermal radiation from the underlying heat gains and reflectivity of the various surfaces of the planet. This occurs by the atmosphere’s absorption of shorter wavelength radiant energy from the sun, and from convective heat fluxes of air that rise from the surfaces. The conserved heat in the atmosphere that is retained by these ‘greenhouse gases’ radiates energy, some of which is directed to the surface and lower atmosphere (main source of the planetary, warming effect), whereas the other escapes from the atmosphere out into space, all causing controversies about its ‘entropic’ nature, a sticking point for those in the anthropogenic global warming denial business. That being said, the processes that produce this difference between the actual temperature of the Earth’s surface and the effective planetary, average temperature is due to the complex interactions between land, oceans, and the radiative gases of the atmosphere. Therefore, what was once the planetary, self-regulated effect that naturally occurred before human intervention is now ironically, reductively, and incorrectly analogised into the forceful, human-dependent, physical and metaphorical construct that the industrial technology and building of ‘greenhouse’ is.

To add to the irony of coining the term ‘greenhouse effect’ as analogical misinterpretation of scale, it was Ekholm himself who also later suggested that the burning of coal eventually could double the concentration of atmospheric CO₂. This made Ekholm an early proponent, not of global warming, but of planetary-anthropogenic climatic control. Being influenced by the thoughts of his lifelong friend and colleague Svante Arrhenius, he believed that this rise would ‘undoubtedly cause a very obvious rise of the mean temperature of the Earth.’ By controlling and colonising
the production and consumption of CO₂, he thought humans would, not irreversibly and insidiously damage the global composition of the entire ecosystem and thus the sustenance of life, but that instead men would be able to ‘regulate the future climate of the Earth and consequently prevent the arrival of a new ice age.’ In fact, already by 1917, the notion of controlling and colonising planetary climate seemed to be an unwitting misunderstanding of the sheer scale and complexity of the global environmental system when Alexander Graham Bell wrote that the unchecked burning of coal and oil ‘would have a sort of greenhouse effect’, and that ‘the net result is the greenhouse becoming a sort of hot-house’, leading Bell to already then believe in, and propose, the use of alternative energy sources such as solar energy.

With this in mind we can sense that the cause of the falsity is a double misconstruction - that the building-technology supplants atmosphere; that technology masters nature. That is the essence of the ‘crisis of scale.’ It is a crisis of binary reductionism that collapses size, time, and magnitudes. A crisis of scale as defined by Hungarian artist and pedagogue Gyorgy Kepes [see c.(C), & c.(D).] occurs between the human, biological, and cosmological scales of space and time, yielding the highly problematic, visual, social, and environmental complex we face today. As per Kepes - “…every magnitude has its own structure. If limits of scale are overrun, either a new level is reached or the old level collapses. If two scales are mixed, confused […] then there is an out-of-scale condition. The pattern loses its connectedness with its field. There is a state of crisis.”

This crisis goes beyond just the visual or perspectival issue of landscape. It is through the visceral, atmospheric realisation that we find a deeply ambiguous, metaphorical contradiction - of how our landscapes may be “breathtaking”, not in the romantic, emotional sense of reacting to the beauty or magnificence of a landscape, but in the physical sense, of just simply not being able to breath. Today, ‘greenhouse,’ may very well be that overarching manifestation: that, aside from being, quite literally, the future purveyor of breathing space, that it is also the manifest of the

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built environment as that “breathtaking” landscape, one that emotion-
ally produces an overwhelming feeling that takes our breath away by
dissociating the presence and image of our landscapes into a largely
indiscernible by-product, a future ghost coming to talk to us, presently
and presciently, as toxic rupture and disjuncture from nature.

(Fig. 25) Industrial Agriculture Greenhouse Superstructure (and largest solar powered 'public'
facility in the world) turned into a park for families to come and breath 'better’ air, for a fee,

‘Greenhouse’ strongly exemplifies the ripple effects of the scaleless in-
strumentalisation of potent technics. Over time, these engender a deep
crisis of ruptured ecological relations due their ‘growing’ disproport-
tions. In other words, as far as ‘greenhouse,’ the Earth is not surrounded
by a simple glass shell. It is the Earth’s massive, invisible, delicate com-
plex of solid, liquid, and aerial chemical compositions, of non-human
species, of physical systems that produce and sustain the self-generative
workings of the ‘effect’. Such effect is the critical complex to supporting
the breadth of diversity that allows for Earth to live as a lifeform, which
in turn (appearing not-so-obviously) provides the conditions for human
life. And now, despite decades of warnings, human activity – driven by
this misconstrued sense of mastering and domination, as insidious form
of entropy – has become the forceful, patriarchal, traumatic destining
of life into total, and terminal colonisation.

The consumer-based logic of ‘growth’ is a pathogen that supplants
a misery of scarcity onto a misery of debt. It is a slow-motion chain reaction that unleashes a disproportionate release of greenhouse gases. Clearly, such activities corrupt the greenhouse effect itself, further exacerbating what once was a life-cycle, deforming it into a vicious-cycle of exponential increase of the densities of those very greenhouse gases ($CO_2$, ozone, methane, fluorocarbons, even water vapour, etc.). What we get is an intensifying retention of heat that structurally ruptures, as a schismogenesis, all of the most fundamental geochemical balances of the planet in ways that go beyond the planet’s own geological time-scales for adaptation. This is the trauma that is leading us down accelerated climate change and seemingly inevitably, messianically towards Global Warming. It is difficult to overstate not just the challenges that this will present for Earth’s habitability, but how it articulates the most extreme manifestation of collapse of relations sustained by the Marxian model of 'base-superstructure'. And, it is to me the most-dense of ironies: that the reductive, binary analogy between the planetary system and the human technology of ‘greenhouse’ has been deformed from a massive, self-organising system into an insidious pharmakon of illusory human dependency; a duplicitous object of capitalism that is instrumentalised as either a remedy or as a disease; a binary that unwittingly destabilises the very nature of survival itself; a system, that in its agro-industrial manifestation is projected as a spectral future of ‘greenhouse superstructures’… as ‘breathing spaces’ for ‘food security’.

That colonising force of exploitation strongly suggests that ‘greenhouse superstructure’ is a point of entry for unfolding the broader polemics of ‘greenhouse’. The polemic seems most entrenched at the point where the ethos of intrinsic value of greenhouse technology is dissociated from an insidious pathos that foments the spectral effects of accelerated climate change. To examine this counter-intuitive counter-intelligence, let us treat the greenhouse superstructure, at once, as the technological specimen of study as well as the platform for observation itself [see c.(A) & c.(B)]. The deliberately tautological setting is a way to contrast and iterate that deep contradiction, of ‘greenhouse’ not just being a solution – as messianic ‘breathing space’ for food security and even pandemic protection – but also of it being a problem… as invisible generator of toxicity in the forms of economic and racial segregation and of neoco-lonial power.
That purely technological essence of ‘greenhouse’ is fundamentally rooted in its potent capacity as egregious container for transposing the far to the near, not simply physically and culturally, but environmentally. And as such, traditionally it has been the instrument of choice to reduce and withhold the living and exotic memory of natural history. That is why ‘greenhouse’ is the physical manifest of the violence of ‘transplantation’. It has and continues to facilitate not just the movement of biota from one hemisphere to another, regardless of climate, but also the misleading transposition of those climates as insufficient, reductive, transgressive misrepresentations. It is that potent technical capacity of greenhouse that makes it, in my mind, the first virtual reality, where time and distance are physically collapsed from living form (this as opposed to its digital counterpart). This is particularly thickened when arguing that the externalisation of natural history – as memory externalised in the form of technoscientific products – confuses spatial experience as an illusory instrument for global-industrial exploitation. Martin Heidegger, as others, considered the polemics of this collapse as a ‘catastrophe’ of perception where the technological ability to ‘bring near’ creates a ‘uniformity in which everything is neither far nor near, merging of every thing into the distanceless… the frantic abolition of all distances brings no nearness; for nearness does not consist in shortness of distance’. 46 This other catastrophe (‘other’, again, in regards to the one promised by Marx) yields a type of strange perceptual unity corresponding to that of the ‘surface unity’ of aura as, one that glosses-over the fragmenting drive of commodity fetishism and the obsolete phantasmagoria of consumerism. That lubricating, glossing-over quality of aura, which is at the root of the technological history of ‘greenhouse’, is what hinders the potential auratic dimension of nature that greenhouse may conversely re-mediate [we will spend significant time reviewing these claims regarding perception, aura, and the auratic on c.(B)₃, as well as c.(A)₃, & c.(C)₁].

That perceptual catastrophe is at the heart of our collective inability to sense or contextualise the invisible forces that drive Global Warming. Over time, ‘greenhouse’ has been a protagonist of that catastrophe. It

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has mutated, from the choice technic of elite colonial and horticultural space, to the monocultural-industrial instrument for neo-colonial technoscience. That latter vestige is to be the principal manifestation of both of those socio-economic and perceptual catastrophes into a singularised messianic technoscience of greenhouse superstructures. They have become that messianic complex – physicalized yet disembodied, localised yet unspecific. They are the very disembodiment of the actual promise of salvation from Global Warming, one that ruptures our environmental forms and relations for living. The current, suspiciously understated prominence of greenhouse superstructures in the global marketplace is a fairly accurate barometer to the way greenhouse superstructures play an increasingly protagonist role, surely becoming, quite literally, the core spectre of the last vestiges of global 'free'-market economy.

In the extensive 2012 analysis of the state of the art of industrial greenhouse cover structures, or superstructures, titled ‘Greenhouse Cover Structures’, Johannes Max and Ulrich Schurr assert that, like many products, their turning point towards ubiquity comes with the advent of plastic:

‘For a long time, glass was the only greenhouse covering material and, mainly due to the high investment costs, horticultural greenhouse production was almost exclusively restricted to the industrialized countries in the temperate latitudes of the northern hemisphere. In the 1950s, a groundbreaking and rapid development was set in motion when [plastic] polyethylene (PE) film was introduced as a cladding material for horticultural growing facilities. The most obvious advantages of plastics are the much lower costs of the material itself, the simplified mounting, and the considerably lower requirements regarding the static load capacity of the superstructures. Within a few decades, greenhouse production grew very fast and expanded worldwide. For the years around the turn of the millennium, the area covered by greenhouses was estimated to have grown at a rate of 20% per annum and is currently predicted to grow further. In the beginning of the 1980s, for instance, the area under protected horticulture in China was around 10,000 ha and reached almost 2 million ha by 2002, making China the country with the largest area under greenhouse covers world-
wide. Also in the tropics and subtropics, particularly in Africa and the Middle East, the use of greenhouses for horticultural production has been steadily increasing in the last decades and still continues to increase. Today, greenhouses can be found in all climatic zones relevant for crop production and in most of the world’s countries [my emphases].’  

The 20% rate of increase of industrial greenhouse construction continues. More recent estimates assess that this rate of ‘growth’ of greenhouse superstructures is spreading around the world, with transnational companies targeting South America and South East Asia as prime sites for global agro-business, still with China leading the way, having well-over 3 million hectares (ha) assessed in 2011. At that rate, China’s position in the market would now be well over 5 million ha. Now, the Netherlands, one of the most prominent perpetrators of colonial violence during the ‘discovery’ of the Americas, and still home to the fifth largest fossil fuel corporation Royal Dutch Shell, has been the chief developer and market-cornerer of the industry-standard Venlo greenhouse since the industrialisation of agricultural cover structures began. Only recently challenged by Chinese-made Venlo types, the Dutch lay claim to pioneer the optimisation of how greenhouse cover structures operate. Holland is second in food production by value only to the USA, which is over 200 times its size. This means that their ‘efficiency’ allows the Dutch to be able to reduce, and thus radically control, the production and distribution of farm produce by enabling a range of real and artificial environmental conditions for different types of crops and their acceleration. This occurs on a fraction of landmass. But it also fractions, sequesters, and narrows the distribution of food, and its labour, on the international market. There are, of course, important efficiencies resulting from such aggressive, profit-based business developments. For instance, the academic institutions and private corporations behind these vast greenhouse complexes claim that alongside developments in ‘precision farming’, they have been able to double the yield, dramatically reduce water dependence, almost eliminate the use of chemical pesticides, and reduced the use of antibiotics in animal livestock production. This

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‘model’ of agricultural infrastructure promises to produce enough food for equivalent land-masses in temperate regions to become self-sustaining, without having to require consumers to radically change their diets (yes, asking consumers to change behaviour cannot, ever, be part of any profit-based business model).  

But, there is other data at work here. For instance, cultivating tomatoes in heated greenhouse cover structures demands 5.4 times more energy per hectare, increasing 2.75 times the CO\textsubscript{2}-eq\textsuperscript{49} emissions per kilogram. This energy demand for heating does amount to 56.8% of the on-farm cumulative energy demand, thus impacting the supply chain by increasing 2–3 times the CO\textsubscript{2}-eq emissions of heated and unheated crops.\textsuperscript{50} Besides the issues with energy and CO\textsubscript{2} emissions, which could arguably be reduced if, and only if, radical advances in the renewable energy technology and economy take place immediately, it is, at best, ethically necessary to question the market’s concentration of food production, especially by exporting these Eurocentric ‘models’ of agro-business, which seem to be developed only with regard to efficiencies and profit-margins and without any regard to economic or cultural impact such models may impart on people (like me and my family) who live out there on the ‘developing world’. No less, at a glance…

…these models could severely harm our ability to stem the weakening of the planet’s biodiversity, and thus hinder one of the only proportional methods of mitigation of rising global temperatures.

This occurs by discouraging broad and diversified types of farming, particularly those that are linked to indigenous and local knowledges.


\textsuperscript{49} Carbon dioxide equivalent (CO2eq) stands for a unit based on the global warming potential (GWP) of different greenhouse gases. The CO2eq unit measures the environmental impact of one tonne of these greenhouse gases in comparison to the impact of one tonne of CO2. - see ‘CO2eq | Definition’. Climate Policy Info Hub, https://climate-policyinfohub.eu/glossary/co2eq. Accessed 20 June. 2019.

– beyond those that have been erased, enforced, or sequestered by the North – as these represent critical, parallel leverages that complement any ‘sustainable’ industrial agriculture and thus the long-term support of our healthy ecosystem services. In other words, it is, at best, questionable to promote future forms of agriculture, for example, of high-tech agro-business precision-farming, that do not radically incorporate biodiverse notions, both technical and cultural, that are inclusive of the far-reaching role ‘farming’ has on the economies of the world. We are required to be inclusive of deliberately forgotten and marginalised human and non-human interests in the process. Yes, that is just a glimpse of the scale of the problem… of how far off the pathways to habitability the destining march has taken us, and how near the edge of that cliff, of that cascading tipping point, we are now walking along.

**Transitioning the Greenhouse Superstructure**

Before walking closer unto the edge of the polemics of ‘greenhouse,’ let us briefly visit some potentials for transitioning ‘greenhouse’, from a colonial, neo-colonial, monocultural, disproportional instrument, into a de-colonial, proportional, and organological component for biodiversity. I propose to you that this type of transitional potency requires us to ask the toughest questions about what it is to interrupt Global Warming without further exacerbating the disproportionate entropy of our messianic march. If anything, it has become painfully evident that from now on, our interventions must carry potentials to embody and display the caring contemplations, actions, and recursions that allow for inhabiting the multiple dimensions, margins, and perceptions – albeit the worlds – that life must from hereon encompass. In the case of ‘greenhouse’, that specific conception of display I will further refer to as social pedestals is

here to be briefly reflected upon as the potential for resilience. By oscillating between notions of site-specificity and non-locality, not from the purview of nation-states, but from-within the general geography of bioregions, I hope to articulate an object of display that has no presence in the putrescent binary of interior and exterior. It is one that is less a physical support structure, retinal figure, sculptural determination, or speculative action than a coherent array of circumstance and potentiality across boundaries. It is to depart from a notion of landscape that transgresses the dogmatic nation-state interior over exterior, taking into account that the infrastructures of nature (now often referred to as ecosystem services) are interdependent, not just across surface areas of countries, but across bodies of water, across atmospheres, and hemispheres, with relations that are rarely linear or even in proximity.

One way for those infrastructural arrays to take effect is to first come to terms with the glassy, colonial affair of superrepressed violences that is ‘greenhouse’. As the very instrument of industrial transplantation, one cannot sidestep the greenhouse’s strong, scaleless, ‘hyperobjective’ quality that, I’d imagine, Timothy Morton would ascribe [see c.(D)]. By acknowledging the current way in which industrial greenhouse superstructures are, by definition, a hyperobject, we can grasp, barely, the very scale-less ‘viscosity’ that flows and transgresses space-time as a non-local form. But, can we harness onto that viscosity in a manner that can help us switch perspectives? Perhaps, by visiting Lawrence Vale’s metaphorical ‘window’ of his 11th axiom of resilience one could sample what manifold access to many participants and observers may mean: a window that offers a broader social and analytical reality of nature itself as a potential, multidimensional ‘picture’ of resilience. In principle, by contrasting the ‘greenhouse’s’ hyperobjectivity to that of the 11th axiom, we may find a quality for shifting the transgressive, homogenising ‘global’ form of natural history into a type of site-specific and bio-regional concatenation: a scaled and diverse network for environmental resilience.
To mediate that seeming incongruence between the scaled manifold and of scaleless viscosity, I turn to Lina Bo Bardi’s notion of *propædeutics*; in this case, as a ‘pre-place’ for experimenting with human and non-human sociality that may emerge from dissolving the boundaries of interior and exterior. Instead of framing a dialectical opposition between the ‘window’ and the effect of ‘distancelessness’, I turn to Bo Bardi’s *propædeutics* so to imply – before it occurs – a kind of ‘non-local site-specificity’ of space for a tangible kind of performance and *dis-play* [see c.(D)3].

Without holding-on to romantic or nostalgic notions of purity – of nature in some sort of untouched, past crystallisation while still keeping a strong consideration towards large-scale ‘balances’ of the Earth – Bo Bardi deliberatedly projected ecological conflicts between manmade space and the environment already in the 1950s. She particularly suggested that habitable space is not just defined by the quantifiable objects of technology, but that the non-metaphorical quality of spatialized narratives is what yields the negotiations between spirits, bodies, and environments, or rather between the Politics that reflect spatial production to be a ‘type of fair medium, that is naturally critical…responsible for the
modes for living.\(^{52}\)

According to Bo Bardi, such spatial treatment for cultural and activist practice [rooted in no small manner in the anthropophagic roots of the Brazil’s own counter-normative culture, see c.(A)\(^2\)] is what would de-pose modernity’s central role in the West’s superrepressive violence of colonisation, and its discrete and discreet superimposition of ethnocen-tric values. Those *propædeutics* are for me what is absent in critical values such as the 11th axiom and the hyperobject, and their affective impacts against hegemonic force. And thus, now with that triadic, it is that I am ready to oscillate — with the 11th axiom, the hyperobject, and *propædeutics* — so that you and I can walk between them and begin to perceive those heightened sensations...in particular those driving forces we are unwilling or unable to otherwise sense, that destine Global Warming.

From the *11th axiom of resilience* I look to activate a type of quality for perceptual distribution that challenges the closed, ethnocentric deformations of sovereignty that have been superimposed onto ecology. The ‘window’ within the axiom suggests more provocative oscillations that may be considered, not as global overviews, but as horizontal *nonlocal-site-specificities* of what ecology may mean. If we are to consider remediating the vast challenge of Global Warming as a project of preparedness for rebuilding (which is in principle what Vale defines as ‘resilience’), it is perhaps adequate to think of this window of *remedi-ation* not just as a technical or physical challenge that must be encountered with technological and opportunistic solutions, but as a *window* for comprehending conditions and multiple perspectives. As per Vale, ‘You think you have a technical design problem to solve, but what you have instead is a window into conflicting values...’\(^{53}\) When we profile this window on the body of ‘greenhouse’, a spatial change of our point of view occurs. Something familiar yet elusive, a haunting, is called: instead of an illusory, messianic promise of salvation from Global Warming through globally adaptable, scaleless, modular ‘solutions’, what we instead perceive is the unravelling consequences of climate radicalisation by

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way of the careless displacement of locality and the violent transplanta-
tion of bioregions. This change in perspective allows us to sense the actual, remote, physical, mental, and digital worlds that constitute our remediable reality, rather than what otherwise seems to be an unavoid-
able cataclysmic destiny. This differential ‘window’ amplifies the objects and images of the otherwise thin and transparent surface that conceals colonial violence. What we begin to sense instead is a deeply thickened landscape and atmosphere overlaid with information; in this case not just of capitalist and narcissistic self-interest itself, but also its illusory drive as the will to master and dominate nature as purported by the patriarchal formats of natural history.

From my perspective, what I mean is that, for a long time, I thought I knew the locus of my memories, of my neighbours, and of where I ‘live’ – even in the homogenising blur of the physical and digital. But the switch of perspective has begun to display how transnational interests deregister and confuse the boundaries of history, resources, property, and geography. By standing and looking from the 11th axiom of resil-
ience, I sense the fallibility of the messianic promises of technoscientific approaches for ‘fixing’ accelerated climate change. I no less sense such falsity when relying on the digitalisation of experience and of memo-
y. Through the 11th axiom, Vale also warns that such ‘window’ must be critically considered and not misconstrued merely as a digitalised ‘virtual reality’:

‘The site-specificity of resilience will increasingly follow a different tra-
jectory [from the common affliction of disasters] given the global flow of electronic data and information. Inevitably, the world’s on-going litany of disasters will continue to intersect with the hyperconnected realm.’

This suggests – as the concentration of data storage and control of its distribution intensifies, and as the ubiquity of desensitising forms of digitalised experience are exacerbated – that while the rate and intensity of global warming-related disasters increases, poorer regions with much less power over their ‘interconnectedness’ will have greater difficulty

in recovering, not just due to the obvious ‘lack’ of resources, but also because they are prone to averse cost-benefit assessments based on the digitised ‘image’ appropriated from those specific disasters, and from climate change as a whole.

One concrete – and personally offensive – sample of such misconstrued version of the ‘window’ was the test of the virtual reality platform ‘Facebook Spaces’ (software and hardware) made and now marketed by Facebook. On Monday, October 9, 2017, less than a month after hurricanes Irma and Maria tore through and decimated many of the islands of the Caribbean, Mark Zuckerberg himself, along with the director of the virtual platform Rachel Franklin, decided to test their ‘social’ VR parastructure by teleporting their own virtual handles (or avatars, or whatever), hopping-around carelessly from site to site on crisis-riddled Puerto Rico. Not only did they use, and capitalise upon, the misery-porn imagery to marvel about the ‘awesome’-ness of their software and hardware, but they barely even commented on the awful reality of the situation, making the exercise, at best, ‘tone-deaf,’ 55 if sociopathically despondent.

Zuckerberg’s first reaction, for instance, was: ‘here we are, in Puerto Rico, and you can get a sense of the damage the hurricanes have done, and what’s magical about virtual reality is that you can get the feeling that you really are in a place.’ There was simply no display of any empathy for Puerto Rican people appearing in the VR backdrop (all trying to find drinking water in the middle of a massive flooding), all the while Zuckerberg and his ‘awesome Head of Social VR’ Rachel Franklin even go as far as to give each other ‘high-fives’ with a flooded area behind them, all during one of the deadliest and costliest ‘natural’ disasters of United States’ history (considering that Puerto Rico is still a colony of the U.S.). It is very difficult to explain how demeaning this 'test' was…

Breathtaking Greenhouse Parastrucures

(Fig.27) Mark Zuckerberg and Rachel Franklin in avatar/handle mode doing high-fives during a “tour” of Puerto Rico in ‘Bizarre Virtual Reality Promo’ days after hurricanes Irma and Maria, photograph from You Tube video, 2017. Source: Olivia Salon, The Guardian.

For the video link go to the Intransitive Journal at [http://www.intransitivejournal.org]

…and for me, this kind of desensitising, and anaesthetising of life is fundamentally, insidiously encrusted right at the binary fracture we refer to as interior | exterior. It grows like a cancer that tears me away from the willingness to empathise with the prognosis that climate scientists are making about Global Warming. And, I sense it is the essence of the much deeper ‘virtual image’ that the entire concept of greenhouse purports. Our collective trauma is so deep that the acts of dissociation and depersonalisation towards denying climate change are normalised into a transparent flattening of natural history, where even the most obvious traumas – from present-day cataclysms, to the very ‘discovery’ of the Americas – are thinned-out. That such normalisation and flattening is in no small measure spurred-on analogously by digital social media.

Considering the inadequacies that emerge from how the modern (white) privilege of the 'visual' drives today social media to the illusory effects of 'retinal' dysfunctions, it is no surprise to realise that the positivist ‘seeing is believing’ trope conceals the nature of the remote and massively distributed inequalities of Global Warming. Morton acutely assigns this condition to hyperobjects, as they are ‘massively distributed in
time and space such that any particular local manifestation never reveals [its] totality." This lack of revelation, that thinned-out concealment, remains ‘somewhere out there’, at the core of our traumatic blindness and ensuing consumerist bliss. It is inculcated, from the early periods of the industrial revolution in the late 1700s, up until the very present emergence of digitalised memory and social media today. It is a dysfunction that has been driven into the cortex of Western psyche, rapidly advancing in the largest developing economies, projecting mercilessly a dire prognosis for habitability. And, that prognosis has myriad ways of being questioned. In this case, now that we are here standing at the precipice, I would like to ask: can industrial greenhouse cover-structures become infrastructures that process memories and perspectives to re-mediate the trauma of those ruptures? Instead of continuing to be an instrument of illusion – itself as the thinning-disembodiment of the violence of natural history – can greenhouse superstructures emerge as a transitional body, to be a resilient medium towards sensing the complex that is accelerated climate change? In order to begin to inform these questions, I resort, albeit opportunistically, to the concept of ‘resilience’, not just as an act of ‘observation’, but as a manner of recursion, of re-membering.

To bridge and re-member, to process the challenge against, and away from the interior | exterior binary trauma, let us walk across the notion of propædeutics once again. Bo Bardi practiced a highly-hybridised form of art, curatorship, and architecture, all as integrative practices of, and for, a kind of subtle public pedagogy against deeply embedded colonial superimpositions. Her ironically rejected application for a professorship in the Federal University of São Paulo in the 1950s was the 90-page pedagogical manifest cited earlier, titled Propædeutic Contribution to the Teaching of Architecture Theory. Through it she expresses a variety of positions about the crucial, performative importance of space as place for making and challenging life, later tackling the civic role of public space in education, itself as physical, spatial middle-ground. Her positions were a clear sign of how she had already understood her own questionable role as a European expat in colonised America. And, over time, it became clear she took meaningful strides towards understand-

ing the expanse of culture and folklore, and of colonial violence that constituted the enormous and diverse array of bioregions we know as Brazil. Her disposition of those experiences and understandings perhaps did not necessarily begin with a thorough understandings of her own role as European. And despite clear signs of evolving practical and material perspectives, the spatial, performative, and programmatic resolutions to her disparate and diverging works undoubtedly represented a courageous theoretical, political, and methodological consistency that can be drawn back directly to her propædeutic contribution.

(Fig. 28) Casa de Vidrio, view of patio. Source photo: Nelson Kon / Inst. Lina Bo e P. M. Bardi.

Although her work was elegantly, that is to say, not overwhelmingly saturated with expressing such concerns, I’d argue that her aesthetic programming and craftsmanship revised material, spatial, and labour economies iteratively, recursively, as experimentation. And I’d argue that it led her to intensify her condemnation of the ethnocentric divisions driven by ideologies of interior and exterior – physically, spatially, and mentally – perhaps as the chief deformation of living imposed upon the Americas.57 Not only did she make these ‘propædeutic’ provocations against the inadequacies of technocratic methodologies and modernism’s penchant for ‘scienticism’, she moreover manifested her modus operandi of work. She called this mode ‘immediate-life-architecture’ to be

57 Bardi, Lina Bo. Tempos de Grossura: O Design No Impasse (1a ed, Instituto Lina Bo e P.M. Bardi, 1994) 8.
contrasted against a cogent idea of environment as ‘total-space’ where practice is no spectacle or spectator, but the deployment of spaces of encounters for ‘actors’. Lina’s spaces are ‘are organisms apt for life, where people are treated as actors who have the power of decision-making and of transformation for what exists.’

Through her approach – which spanned well beyond her work as an architect into her less-known, yet, in my opinion, far more important work as scenographer, curator, and cultural critic – she looked to foment a principle for fostering and strengthen intuition and environment at all levels of society. This was particularly crucial in her committed efforts to dismantle the exclusive privilege paid to human ‘interior space’, striving always toward dissolving that fundamental toxicity of its binary implication, an indistinguishable signature that is of crucial importance for us. Particularly evident in her public-cultural works, we can still to this day witness a spatial and programmatic distribution that equally celebrates learning, gathering, exhibiting, and practical workspaces, no better exemplified by the Museum of Modern Art of Bahia and later at the Centro Pompéia in São Paulo, both of which she designed, built, and later directed [it is difficult to overstate the importance of her achievements already in the 1950s, as we will revisit her work elsewhere, see c.(D)3].

With that, as we prepare to depart from this convolute, I want to ask you to consider the spatial conjugation of the non-local, the site-specific, and of propædeutics as a resilient act of what Doreen Massey calls thrown-togetherness.

‘Place as an ever-shifting constellation of trajectories poses the question of our throwntogetherness. In insisting in the importance of material place, the chance of space may set us down next to an unexpected neighbour. The multiplicity and the chance of space here in the constitution of place provide that inevitable contingency which underlies the necessity for the institution of the social and which, at a moment of antagonism, is revealed in particular fractures which pose the question of the political.’

59 Massey, Doreen B. For Space (SAGE, 2005) 151.
In this case, ‘material place’ (which I supplement as physical) namely as the ‘chance that space might set us next to an unexpected neighbour,’ is where the deposition begins to shake the seemingly temporal neutrality of greenhouse, as past container of natural history and as future solution to Global Warming. **Throwntogetherness** is that which shatters the illusory bindings of centralised domination; it is that spatialised approach which leads us to examine the indeterminate and affirmative qualities of multiplicity. It opens us to chance, rather than to destiny. It is a manner in which the deposition of modernity’s ‘centre,’ as the North and West violence of colonisation and superimposition of values as the core and as a ‘massively ruptural, world-historical event’ 60 places you and I right against the surface of greenhouse. From that surface, one must become not that which ‘makes’ the binary, but oneself the diverse and differential display of resilience. It is on the oscillating dance between the proposed notions by Vale, Morton, and Bo Bardi that Massey’s transversal section of **throwntogetherness** – between resilience, hyperobject, and propædeutic space – gives you and I a ‘place’ to depart towards a non-local site-specific form of criticality, one shifting the greenhouse off from its privileged role as archive of, and saviour to, natural history.

*Pero el dos no ha sido nunca un número*

*porque es una angustia y su sombra* 61

Our stroll is neither the object nor the objective of colonial desire. ‘Greenhouse’ must become for us a kind of **recalcitrant prop** 62, a defective **Deus ex machina**. It ought be an inverted prophesy, say, a fallible disclaimer to the landscape and atmosphere of our stroll that may instead foster the re-emergence of life beyond the pestilence of the materialist/creationist bicameral mind. Stemming from neither the messianic spirits

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**Footnotes:**

60 ibid. Massey 2005, 63.


62 ‘Another instance of the autonomy, or the pseudoautonomy of the object is when the prop goes awry and eludes (or seems to elude) the actor’s control. Such “recalcitrant props” may be intentional (the various items that refuse to work properly in Samuel Beckett’s plays) or unintentional (the gun that refuses to fire on cue).’ - Sofer, Andrew. The Stage Life of Props (University of Michigan Press, 2003) 24.
of the binary impasse of dialectical opposition, nor in the technological promise of saviour, it is the triadic strangeness of chance, the heterarchy of the three and the many, that will continue to spur recursion, again and again, during our stroll. And while considering how to give body to such alternative recursions of the greenhouse superstructure during our stroll, the PhD will evolve to be a reflexion upon the impossible paradox that is conceiving, designing, and building greenhouses as supports that meet the scales of accelerated climate change and of climate injustice… of Global Warming.
COLONIAL MEMORY
convolute \((A)_2\)

**COLONIAL MEMORY OF GREENHOUSE TECHNOLOGY**

**ABSTRACT:**
Convolute \((A)_2\) is an initial attempt to unleash the binary impasse, that psychotic ‘double-bind’ of interiority and exteriority that ‘greenhouse’ represents. As such, I must walk with you right up to the abyss of messianic promise and mythical violence that ‘colonial memory’ perpetuates. From there, we will aim at pivoting away, conscious of a possible emancipation, or rather, of an associative detachment, from the trauma of colonial violence. The movement is motivated by the realisation that I need to show that there, buried in my technical predisposition, in the very act of externalising my knowledge, there, lies embedded, the ‘colonial drive’. I do so because, to uproot and question that facile, assumed, daily violence of externalisation is to present optional and marginal paths; *transitions* that may create distance away from the insidious logic of ‘greenhouse’. I have found it to be the only form of relation, as last resort, to the ultimate object of the colonial-industrial form of capitalism that is ‘greenhouse’: the messianic destining of Global Warming that divides to contain the oppositional and dissociative form of colonial trauma. The following ‘convolute’ and passage offers a glimpse of how I begin the deposition, describing my research perspective as Puerto Rican & Caribbean artist, and, hopefully, leaving you with a curious desire to continue by my side.

**One last note before moving on:** I try a sensitive endeavour, which is to ‘unmediate’, to render, without definition or burden, the figure of the Carib that lives in me. It is very difficult to explain what that means. I can only say that it is an experiment, a kind of séance, or reverse exorcism, to unlearn the colonial drive; to speak with a person that is trapped in the trauma of my colonial upbringing. I can only hope that such attempt provides you a glimpse of empathy about that trauma.
Zoë Sofia states that ‘As we shall learn from Heidegger’s analysis of a container technology, containing is not as simple a function as we might first think. Dwelling means “to remain, to stay in a place” and also, in Heidegger’s exposition, “to cherish and protect, to preserve and care for” […] “Real sparing is something positive and takes place when we leave something beforehand in its own nature, when we return it specifically to its being, when we ‘free’ it in the real sense of the word into a preserve of peace”. There is a notable resonance between this idea of a safe preserve for humans or other entities to become themselves, and the intersubjectivist account of the maternal function as one of actively containing an emergent subject and letting it play safely in potential space, so it can become who it is.’ Additionally, Bernard Stiegler states that ‘Agriculture raises [élève] animals and plants, for which it takes care, and one must relate this “raising” [élévage] to the question of elevation and even of an education in the interior of which it takes shape and place, that is, what one calls culture. Culture is that which cultivates. What is cultivated is that which is worthy of being taken care of by the raising of a cult. Culture is what supposes not simply a rupture with nature, but a transformation of the process of vital individuation through a process of psychic and collective individuation which causes a third process of individuation to appear, which is the technical system.’

archaeologist André Leroi-Gourhan develops a general theory of the relation between the technical (as universal tendency) and the ethnic (as specific, differentiated concretisation). For Leroi-Gourhan, perhaps in contrast to Vernadsky’s noösphere or Heidegger’s enframing, the entirety of the ‘human group’ behaves as a living organism, assimilating its exterior milieu via ‘a curtain of objects’ – which he also calls an ‘interposed membrane’ and an ‘artificial envelope’ – that is technology. The milieu of the organism is divisible into the exterior milieu (geography, climate, animals and vegetation) and the interior milieu (the shared past of the group, thus ‘culture’, etc.). This division enables a clarification of the
concept of technical tendency, where tendency is a movement, within the interior milieu, that gains foothold in the exterior milieu.

**superstructure (n.)** p.755 In his preface to the *Economic and Philosophic Manuscript* of 1844, Karl Marx tell us that ‘In the social production of their life men enter into relations with each other which are determined, necessary and independent of their will, that is into relations of production, which correspond to a given level of development of the material forces of production. The ensemble of these relations constitutes the economic structure of society, in other words the real base on top of which is raised a political and juridical superstructure and to which correspond given social forms of consciousness. . .

At a given point in their development, the material productive forces of society enter into contradiction with the per-existing relations of production (that is the property relations, which is the juridical equivalent of that expression) within which these forces had previously moved. These relations of production, from a form of development of the productive forces, are converted into an obstacle to them. And then there arrives an age of social revolution. With the change in the economic base the colossal overhanging superstructure is revolutionised and collapses more or less rapidly . . . A social formation does not perish until all the productive forces for which there is room in it have been developed and new relations of production do not take their place until the material conditions of their existence have matured in the womb of the existing society.’ Whereas Gramsci further reaffirms that ‘Unity is given by the dialectical development of the contradictions between man and matter (nature — material forces of production). In economics, the unitary centre is value, alias the relationship between the worker and the industrial productive forces (those who deny the theory fall into crass vulgar materialism by posing machines in themselves — as constant and technical capital — as producers of value independent of the man who runs them). In philosophy [it is] praxis, that is, the relationship between human will (superstructure) and economic structure. In politics [it is] the relationship between the State and civil society, that is, the intervention of the State (centralised will) to educate the educator, the social environment in general.’

We are here to fundamentally supplement these definitions of ‘superstructure,’ if for no other reason that these treat ‘matter’ interchangeably as ‘nature’, at best as endless resource, or worst, where modes of production are automatically inscribed as a ‘natural right’ to extraction.
entropy (n., and negentropy, ant.) p.740 is the thermodynamic quantity representing the unavailability of a system’s thermal energy for conversion into mechanical work, often referred to as the degree of disorder in a system. Negative Entropy or Negentropy is considered to be a function of resistance or reduction of entropy. According to Bernard Stiegler’s notions of entropy and negentropy (not withstanding his anthropic and neganthropic extensions), the greenhouse is looked at as a pure technical object that, by definition, negotiates and even challenges the principles of entropy, physically, virtually, and conceptually. With that, I point to Stiegler who claims that ‘emerging from thermodynamics about thirty years after the advent of industrial technology and the beginning of the organological revolution lying at the origin of the Anthropocene, both with the grammatization of gesture by the first industrial automation and with the steam engine, the theory of entropy redefines the question of value, if it is true that the entropy/negentropy relation is the vital question par excellence. It is according to such perspectives that we must think, organologically and pharmaco- logically, both what we are referring to as the anthropocene and what we are referring to as neganthropology.’

protention (n.) p.752 In the introduction to Stiegler’s Negaanthropocene, Daniel Ross states that ‘For Husserl, striving to understand the phenomenal constitution of an experience of temporal continuity, the experience of objects in time (temporal objects such as a melody) cannot, strictly speaking, be composed of instants: the “instant” just past must somehow be included in “present” perception, and Husserl refers to this minimal form of inclusion as “primary retention”, just as he refers to “primary protention” to refer to the minimal form of imagination involved in anticipating the next “instant”. But in Technics and Time, 2, Stiegler undertakes to show that, if the process of primary retention cannot retain the whole field of what is perceptually given, then the retentional operation amounts to a selection within a field of possibilities, and that this (mostly unconscious) selection must operate according to criteria, and that the criteria for this selection must derive from the set of past primary retentions that have since become secondary retentions (or what we ordinarily refer to as memories), that is, from my accumulated “experience.”

doppelgänger (n.) p.738 is an apparition, ghost, or double of a living person. It is considered to be a non-biological look-alike most often taking the form of a ghostly or paranormal figure seen as a harbinger of
bad luck. In many literary forms, that date as far as to the 15th century, written passages equate the doppelgänger to an evil twin. In modern times, the term often refers to a twin-stranger, generally in a neutral sense, and in slang, to describe any person who strongly resembles another person. In German literature, the character of Faust becomes the symbol of the relentless pursuit of knowledge – a wandering conjurer, depicted in several different lights. In Goethe’s Faust the struggle between the bisected self, between good and evil, is externalised as a ghost of oneself, considered to yearn to master all known sciences and the supernatural. Such ‘evil’, in this case represented by the elusive ‘twin’ character of Mephistopheles, is often associated with popular distrust of scholarship of foreign subjects, something that could only be accomplished by way of association with the devil himself. Another reference can be drawn from filmmaker Werner Herzog. In his 2008 film Cave of Forgotten Dreams, while filming a pair of young albino crocodiles in a greenhouse (allegedly) fed with river water coming downstream from a nearby nuclear plant, he narrates the question, ‘Nothing is real, nothing is certain. It is difficult to decide whether these two creatures are dividing themselves into their own doppelgängers. Do they ever meet, or is it that we are looking into their own imaginary mirror reflection?’ The scene has been recently polemicized. Herzog suggests that his encounter with these albinos is coincidental, and that they are a mutation caused by the nuclear pollution. Herzog himself later admits that the albino crocodiles had been brought to the greenhouse after their birth: a play with truth and fiction that Herzog constantly pushes in his work.

hypomnēmata (n.) p.743 was brought forth by Michel Foucault (1983) from Plato as a way of writing to one self, or ‘self-writing’, as a form of memory aid. This can traditionally be referred to in physical form as notebooks, public registers, accounting books, ledgers, etc. The term is further polemicized by Bernard Stiegler, where he articulates how digitalisation and its hardwares (such as smartphones) facilitate unforeseen forms of memory. I believe he argues that memory is now a blurred form of mnemonic complex that goes beyond just the externalised object, instrument, or prosthesis. It is neither just physical nor virtual – it is also neurochemical, and fundamentally different from its original conception, for it radically confuses the conventions of the interiority and exteriority of memory. Ultimately, this updated idea of
the hypomnēmata abridges unforeseen transgressions between the self, collectivity, technology, and consciousness perhaps best exemplified by 'social media'. It points towards a new complex of mind, brain, senses, hardwares, archives, data farms, and the so-called 'cloud' that now radically destabilise memory retention, its control, storage, and retrieval.

**remediate (v.)** p.753 implies a double function: it is the simultaneous act of caring or nurturing back to health, and the act of un-mediating, of questioning and unfolding that which is assumed. Sometimes I give emphasis in the form ‘re-mediate’, where I aim to expand the overarching ideas of ‘medium’ and ‘mediation’, and how they ought be associated to ‘care’, in which the object is addressed, represented, operated, observed, interpreted, or interfaced upon, all, in this case, in light of the imperative toxicity of Global Warming. I will also include a citation from Søren Andreasen and Lars Bang Larsen that adds to this aim:

‘Mediation can be conceived as an expedient structure. That is, a distributive relation that becomes significant in itself. When passed through such an expedient structure, an object emits signification in ways that are typically disconnected from considerations of how the object’s being circulated affects its enunciation. [...] In other words, the materiality of the mediation replaces the materiality of the object which is mediated. In a chemical process the catalyst is always disjunct from the final product. This is not the case with mediation.’

**grow (v.)** p.743 Nicholas Georgescu-Roegen tell us that ‘The conclusion is clear and inescapable. The industrial activity in which a very large part of mankind is now engaged speeds up more and ever more the depletion of terrestrial resources. It must, therefore, come to a crisis. Sooner or later "growth," that great obsession of both standard and Marxist economists, must come to an end. The only question is "When?" Clear symptoms of the environmental limit have become plainly manifest over the past ten years or so. Pollution is spreading practically everywhere. What has been obvious all the time, but entirely ignored by standard economics, is that natural resources constitute a prime factor in the movement of nations. Natural resources have been the cause for the movement of people over the continents, as during the Great Migration, or, in the past two hundred years, from the Old to the New World’ [also see "club of rome" of 1968].

**organology (n.)** p.747 As one of the most disputed terms here presented, Stiegler argues that “If there is to be a future [avenir], and not just a
becoming \[\text{devenir}\], the value of tomorrow will lie in the constitutive negentropy of the economy-to-come of the Neganthropocene. For such an economy, the practical and functional differentiation between becoming and future must form its criteria of evaluation — only in so doing will it be possible to overcome the systemic entropy in which the Anthropocene consists. This economy requires a shift from anthropology to neganthropology, where the latter is founded on what I call general organology and on a pharmacology: the pharmakon is the artefact and as such the condition of hominization, that is, an organogenesis of artefactual organs and organizations, but it always produces both entropy and negentropy, and hence it is always also a threat to hominization. The problem raised by such a perspective on the future is to know how to evaluate or measure negentropy. Referred to as negative entropy by Erwin Schrödinger and as anti-entropy by Francis Bailly and Giuseppe Longo, negentropy is always defined in relation to an observer — that is, it is always described in relation to a locality that it as such produces, and that it differentiates within a more or less homogeneous space (and this is why a neganthropology is always also a geography). What appears entropic from one angle is negentropic from another angle.

**situated knowledge (n.) p.754** Donna Haraway tells us that ‘Objectivity turns out to be about particular and specific embodiment, and definitely not about the false vision promising transcendence of all limits and response-ability […] Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting the of subject and object.’

dsistance (n.) p.738 is the physical space between things. I will here though focus more closely on its role in regards to perspective and perception. Therefore, it is also considered to be the temporal and emotional ‘space’ we require to accurately perceive phenomena. Of course, ‘accuracy’ would be a highly contestable adjective in the axiom which I am trying to establish here in my effort to anchor this definition. But, I do hinge onto several sources who have addressed this perceptual precondition. The so-called catastrophic collapse (say of Marx’s superstructure and/or of Heidegger's distance) is to me analogous to the ‘crisis of scale’ proposed by György Kepes, where modernity irretrievably compromises perspective from our senses. As far as the limits of visual and perceptual dimensionality, I also turn to those articulated by Walter Benjamin (aura), Donna Haraway (situated knowledge), John Law (fractional coherence), Roger Buergel (capitalism), and Timothy Morton.
Breathtaking Greenhouse Parastrucures

(hyperobject), where they refer to the visual as a technical limit offering productive subjectivities that in no small part are due to the challenges of dogmatic regimes imposed by western technoscientific realism. But, as I hope to demonstrate through reflexions (in writing and sculpture), the privilege of ‘distance’ ultimately offers insufficient service to our capacity to recollect and see the broader complex of consequences of the neo-colonial, technoscientific advance. These limitations are manifested most aggressively in recent geopolitical events that, by particularly exploiting the sensual and dimensional limitations of distance, are incongruously facilitating the consumerist onslaught that ‘mysteriously’ results in all the toxicities, physical and behavioural, that continue to drive Global Warming.

amputation (n.) p.733 the term amputation I will treat strictly within the definition that artist Kader Attia proposes, in the context of an amputation delivered by the trauma of colonialism. I hope to expand such a definition to the domain of ‘greenhouse’ as a colonial technology that delivers such violent effects upon our conception of nature and our relation to the environment. *The film-essay Reflecting Memory is a continuation of Kader Attia’s long-term exploration of trauma and repair, both of the body and of society, and probes the legacies of colonialism, slavery, and xenophobia in our time. […] With the different perspectives on grief, memory, and trauma, Attia’s inquiry into the possibility of understanding the Phantom Limb syndrome as a technique for culturally approaching absences, erasures, and ghosts related to historical trauma in the collective social body and its psyche, slowly unfolds. An amputated limb does not determine how trauma might be converted into some sort of healing, but the loss, in Attia’s view, can be used as information. […] The [film-essay shows] interviews interlaced with video performance sequences that show interactions of people and mirrors. The mirrors — as body prostheses and imaging techniques — materialize the “cut” and the “suture” as the two chief conceptual and material operations in Reflecting Memory. In film theory, “suture” refers to the phenomenon by which the mind produces a narrative whole from the fragments combined through cinematic cuts, creating a semblance of totality. In Attia’s work “cut” and “suture” epitomize the violent heritages of colonialism and imperialism as well as the messy work of repairing the damages done. As reflective architectures and paradoxical techniques the mirrors extend, as Attia explains, “the reflection about the complexity of memory, the working of memory, the duty of memory and its representation; about ‘repair’ as a form of ‘re-appropriation’, but
above all as a form of resistance”.

memory (n.) p.746  to set the tone, I will initially refer to memory in terms of Eingedenken, as presented by Walter Benjamin, and reviewed here by Rebecca Comay: ‘the “Ein-” prefix signifying here in fact precisely the opposite of the unifying inwardness of a thought affirming its self-actualization as a culture returning to itself in the recollection of its own formation or Bildung (the opposite, in a word, of the Hegelian Erinnerung which it lexically recalls) - Benjamin's Eingedenken is no longer strictly one or inward (Ein-) and no longer strictly thought (-Denken). It announces, rather, a mindfulness or vigilance which refuses to take in (or be taken in by) a tradition authorizing itself as the continuity of an essential legacy, task or mission to be transmitted, developed or enacted. The site of an intensity turning against itself - “turned intensively towards the exterior” - Eingedenken marks the impasse or “standstill” of thought as such: the “flow” of inference is interrupted. In “blasting open” the continuum, Eingedenken inaugurates repetition as the return of that which strictly speaking never happened: it announces the redemption of a failed revolutionary opportunity at the moment of most pressing danger. “Hope in the past”. Such repetition arrests the apparent continuity of inherited power relations by remembering precisely what official historiography had to repress. Eingedenken thus announces the return of lost possibilities as the return of the repressed. It signals the entry into history of those forgotten or trampled in the victory march of the conquerors.’

archival aspiration (n.) p.734  strictly taken from the context projected for this term by Arjun Appadurai: “…after Foucault, we need a new way to look at the archive as a collective tool. Recognizing that the archive is not just a way to preserve accidental, but precious traces of collective memory, we need also to see that perhaps Foucault had too dark a vision of the panoptical functions of the archive, of its roles as an accessory to policing, surveillance and governmentality. The creation of documents and their aggregation into archives is also a part of everyday life outside the purview of the state. The personal diary, the family photo album, the community museum, the libraries of individuals are all examples of popular archives and, of course, oral archives have been repositories of intentional remembering for most of human history. Thus, we should begin to see all documentation as intervention, and all archiving as part of some sort of collective project. Rather than being the tomb of the trace, the archive is more frequently the product of the anticipation of collective memory. Thus the archive is itself an aspiration rather than a recollection. This deep function of the archive has been obscured by
that officialising mentality, closely connected to the governmentalities of the
nation-state, which rests on seeing the archive as the tomb of the accidental trace,
rather than as the material site of the collective will to remember.’

**exotic (adj.) p.740** refers to matter of an ‘aesthetic of diversity’ as proposed by Victor Segalen. In 1907, he published a book titled *The Lapse of Memory* portraying the culture of the Maori people as they are being drawn to extinction by colonialization. In 1911 he then wrote *Essay on Exoticism*. Through it, Segalen’s practice of ‘symbolist exotism’ is one that does not pretend to understand the exotic object. On the contrary, it is the inability to comprehend it that is stressed. It therefore draws the subjective involvement for a relationship with the exotic object instead. Ernst van Alphen writes that ‘it is only in a sensorial experience of this object that a relationship can be established. This relationship is based on difference, not on identity. The result of this process of sensorial experience does not consist of any knowledge or understanding of the exotic other. It results in self-discovery. It is only within such a differential relationship that the I can disclose him/herself, s/he can only do so as other than s/he is.’

**biodiversity (n.) p.735** is an encompassing term to denote the condition which encourages a balanced distribution of diversity of living organisms, of animal and vegetable species, including of human identity. Biodiversity becomes of most relevance when considering that it is the datum of natural evolution, where diverse numbers of species distribution foster optimal conditions for ecosystems to operate. In the face of accelerated climate change, species suppressions and extinctions represent an alarming condition that may fundamentally destabilise planetary environment, especially for humans. Therefore, fostering biodiversity, which may include the contradictory, certainly controversial idea of controlling of human population, is considered to be one of the few actionable scenarios that may help decelerate the runaway detrimental effects of Global Warming.

**extract (v.) p.741** T.J. Demos states that ‘extraction designates capitalism’s fundamental logic of withdrawal — of value, nutrients, energy, labour, time — from people, lands, culture, life-forms, the elements, without corresponding deposit (except as externalities of non-value in the form of pollution, waste, climate change, illness, and death). It forms hierarchies of power around divisions
that are racially, ethnically, sexually, and ecologically inscribed.’

**standing reserve** [Bestand] (n.) p.755 Heidegger tells us that ‘Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering. Whatever is ordered about in this way has its own standing. We call it the standing-reserve [Bestand]. The word expresses here something more, and something more essential, than mere “stock.” The name “standing-reserve” assumes the rank of an inclusive rubric. It designates nothing less than the way in which everything presences that is wrought upon by the challenging revealing. Whatever stands by in the sense of standing-reserve no longer stands over against us as object.’

**transculturation** (n.) p.757 Cuban anthropologist Fernando Ortíz explains that ‘I have chosen the word transculturation to express the highly varied phenomena that have come about in Cuba as a result of the extremely complex transmutations of culture that have taken place here, and without a knowledge of which it is impossible to understand the evolution of the Cuban folk, either in the economic or in the institutional, legal, ethical, religious, artistic, linguistic, psychological, sexual, or other aspects of its life. […] I am of the opinion that the word transculturation better expresses the different phases of the process of transition from one culture to another because this does not consist merely in acquiring another culture, which is what the English word acculturation really implies, but the process also necessarily involves the loss or uprooting of a previous culture, which could be defined as a deculturation. In addition, it carries the idea of the consequent creation of new cultural phenomena, which could be called neoculturation. In the end, as the school of Malinowski’s followers maintains, the result of every union of cultures is similar to that of the reproductive process between individuals: the offspring always has something of both parents but is always different from each of them. […] The concept of transculturation is fundamental and indispensable for an understanding of the history of Cuba, and, for analogous reasons, of that of America in general.’

**biopolitics** (n.) p.735 is an intersectional field between human biology and politics. It is a political view and praxis that considers the administration of life and a locality’s populations as its subject. Michel Foucault states that it is ‘to ensure, sustain, and multiply life, to put this life in order.’ The term was coined by Rudolf Kjellén, who also coined the term ‘geopolitics’ in his 1905 two-volume work *The Great Powers*. Usage of
the term is mostly divided between poststructuralists, using the meaning assigned by Michel Foucault (denoting social and political power over life), and generally in social and life sciences, denoting broader relations between biology and political science. Today, biopolitics mobilise historical transformation by way of colonial intent. European states have often found themselves grappling with sociobiological propensities of populations. Mercantilism and capitalist modes of production have led to a modern biopolitical approach to famine: the modern state has depended on providing a diet sufficient to keep the biological machines of industrial capitalism running. The British and the French conspicuously developed biopolitics in tandem with colonization to help solidify their control over Ireland and Africa, an approach that they later applied to India and beyond. Developments in microbiology and in public health legislation have instrumentalised the isolation of illnesses like the bubonic plague, as well as vectors of malaria and yellow fever, for the purpose of public health as a political concern in the sense that the state looked to its citizens to be more productive if they lived longer.

enframing [Gestell] (n.) p.739 Heidegger tells us that ‘According to ordinary usage, the word Gestell [frame] means some kind of apparatus, e.g., a bookrack. Gestell is also the name for a skeleton. And the employment of the word Ge-stell [Enframing] that is now required of us seems equally eerie, not to speak of the arbitrariness with which words of a mature language are thus misused. Can anything be more strange? Surely not. Yet this strangeness is an old usage of thinking […] Enframing means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve. Enframing means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological. On the other hand, all those things that are so familiar to us and are standard parts of an assembly, such as rods, pistons, and chassis, belong to the technological. The assembly itself, however, together with the aforementioned stock-parts, falls within the sphere of technological activity; and this activity always merely responds to the challenge of Enframing, but it never comprises Enframing itself or brings it about.’
Nature
Unbound

(Fig.29) América by Stephan Kessler (1622-1700), oil on canvas, 153 × 250 cm, datum ca. 1650-60. Source photo: Berrios-Negrón at Pinacoteca de São Paulo, 2013 (see Fig. 3, pp.34-5).
‘Exoticism is not an adaptation to something; it is not the perfect comprehension of something outside one’s self that one has managed to embrace fully, but the keen and immediate perception of an eternal incomprehensibility. Let us proceed from this admission of impenetrability. Let us not flatter ourselves for assimilating the customs, races, nations, and others who differ from us. On the contrary, let us rejoice in our inability ever to do so, for we thus retain the eternal pleasure of sensing Diversity.’

‘The human races on the lowest grade of evolution live merely for the day. The tomorrow and the yesterday have no interest for them, except in so far as their special daily cares are directly touched.’

‘Memory is...entwined with place (it is localised, framed and made sense of through place) and the spaces (both physical and imagined) and times in which it occurs ... Memory is furthermore inscribed on and within the body of the person who remembers and helps form the ways in which they move, act and react.’


Let’s give context to these three citations by resorting to Benjamin who once wrote,

‘There is something rotten in the law.’

Well, I now write that there is something rotten in technics…

…because the conception of nature continues to be bound to colonialism. Because such binding – say, predisposed mediation – is what contradictorily worsens the fundamental rupture that breaks the human away from nature. The contradiction lies primarily manifested in the overarching aura of technoscience, as the collective delusion that makes us believe we have control over nature, all the while we continue to dissociate ourselves further away from living. Destined by that aura of technoscience, and its ensuing messianic promise, I take ‘greenhouse’ – in all its physical, technical, and conceptual definitions – to be a potent display, most often an insidious one, of that contradictory binding that is buried-deep within us as a toxic, colonial drive. And to explore this seemingly unchecked drive, I will attempt to discern technics, from technology, from technoscience.

In regards to technology, I will hereon mean the logos, the application of the situated study of 1) the so-called ‘externalisation’ of our thoughts made-concrete as technics; 2) the modern accumulation of its own ‘essence’, as that which historically validates its course as remedy and as medium; and 3) the skilled practices for positioning, for asking how, when and from where do we sense reality. I intuit that such set of definitions has been instrumentalised as a messianic force embedded into the technological act as ‘saviour’. Therefore, as an unchecked and growing collective delusion, the instrumentalisation of technology incurs a fetishistic aura, one conjured as a powerful spectre that enforces three simultaneous traumas: it absorbs and suppresses-away the violent history of colonialism; it physically and conceptually rips-apart, amputates, and remains between interrupting critical interrelations that are fundamental to life; and it does so while ‘promising’ to be the messianic entity that will

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save humanity from the very effects of the suppression and amputations that it itself creates. It is that ghostly, toxic aura that ‘greenhouse’ signifies, as glassy manifest of such delusional forces, strongly contributing to the systemic deformation that is Global Warming.

Now, through the following convolute of Colonial Memory, I will depart from material that I presented at the Mnemonics Conference organised by King’s College and Goldsmiths in London in 2015. I will aim to continue to investigate that material, and depose that aforementioned intuition, about what I deem is the potency of dis-playing the ‘greenhouse’ as that which carries compressed, within its own technical and historical surface-envelop, the colonial violence of modern, Western technology. Along with a series of reflexions about the evolution of the technic and technology of the greenhouse, we will encounter a montage that will fold out, altogether beginning to demonstrate a not-quite-linear, critical history, say a genealogy of the broader metaphor of ‘greenhouse’ that I aim to explore. More specifically, the Colonial Memory convolute before you will reflect my own mental constitution about that genealogy as I struggle to parse the unprecedented catastrophe of two back-to-back Category 5 hurricanes that hit my home island of Puerto Rico right in the middle of this doctoral investigation.

Through the convolute you might notice that I cannot hold back from expressing urgency. You will probably sense how I attempt to embody, beyond a mere metaphor, the condition of oppression of the societies that are already experiencing the onslaught of Global Warming, specifically from my own point of view as Puerto Rican. You might even sense that I attempt to enact a temporary emancipation from our colonial binds. But, what I can now retrospectively indicate is that this convolute will reflect how I try, at times desperately, not just to dig into my own memory, beyond my own lifespan. I try to find and become the Caribbean, or say the many Caribs in me, as superrepressed spectres. She/he/they are drawn by my repaso (literally, ‘re-walk’) of the ‘discovery’ of the Americas; and I try my best to persuade you, as you walk along with me, to also try identify with the Carib spectres within yourself.

As I write (as a way to argue with myself), I grow unashamed. I look to challenge, often naively, the self-anointment of the Global North to
entrap all sense of life through the ethnocentrism of sovereign power. That power is set away-from, and put above nature, as that which enforces and obliges the legacy of suppressive and repressive violence in the name of a right to extraction. That power, that colonial intent, now in the guise of terminal neo-colonialism, takes place all at the expense of any contribution the vast majority of humans, and non-humans may provide. With that in mind, I aspire for this broader deposition of ‘greenhouse’ to walk us through Colonial Memory. I attempt this by temporarily conjuring emancipated, unmediated spectres of the Carib; to become provocative, non-fictional protagonists through which we can sense and ‘live’ this critical genealogy available to you beyond any form I could prescribe.

Looking from the Caribbean

‘I have chosen the word transculturation to express the highly-varied phenomena that have come about in Cuba as a result of the extremely complex transmutations of culture that have taken place here, and without a knowledge of which it is impossible to understand the evolution of the Cuban folk, either in the economic or in the institutional, legal, ethical, religious, artistic, linguistic, psychological, sexual, or other aspects of its life.’

My commitment to exploring the forces of Global Warming, as core subject-matter of my work, is rooted in my on-going life in Puerto Rico and the Caribbean. In my lifetime, I have had the dubious privilege of witnessing beaches disappear, the most beautifully diverse coral reefs of the most intense colour variations go bleach-white, and of hearing what once were vibrant and loud rainforests go silent. I say dubious because I sometimes wish I did not witness any of it. I sometimes wish I was someone who grew up in the North... someone who had never

lived the majesty and danger of those places, of that other ‘half’ that is the South, a half that is also infrastructural to planetary life. I thus find myself deep in this state of reminiscence that is overlaid by a desire to forget. It is not nostalgia but a deep melancholia. But I try to resist the cynical part of the impulse, instead dedicating myself to trying to produce affirmative work that may reveal the forces that drive us to usher such decay, to articulate and make-visible the forces and interrelations (or lack thereof) that operate remotely yet interdependently, that allow all of us to breath that fresh Nordic air, and to perhaps generate forms of collaboration that offer specific moments of genuine sensation, all supporting biodiverse dynamics for living. I am therefore ultimately driven to address this subject-matter of Global Warming for it is ultimately the most insidious and violent form of colonialism. It is the ultimate toxic, contradictory, breathtaking type of entropy that privileges (in the short-term) the very perpetrators of the industrial project, while slowly destroying those who, human and non-human, were oppressed to create the industrial Enframing in the first place.

I start by building a point of departure to define what I mean by colonial memory, a type of memory generated, covered by, and suppressed within, the envelop of technological aura of ‘greenhouse’. I am compelled to offer that point of departure as a personal narrative that hopefully leads you to situate and intersect, through the surface of the technic-cum-metaphor of ‘greenhouse’, the place and motivation that energises this research, and about the colonial violence that still drives its own protagonist role in driving Global Warming.

**Two Weeks.**

**Two Hurricanes.**

My insistent and deepening investigation about the role of ‘greenhouse’ in culture, industry, science, and Global Warming has kept me awake at night through many intensifying environmental crises. But the most potent realisation about its role came in October of 2017, when, as part of my doctoral study, I flew to Puerto Rico, the island in the Caribbean
where I was born and raised, and where my entire family still lives.

Two Category 5 hurricanes, named Irma and María, had just hit the island a few weeks earlier, on September 6 and September 20, respectively. Category 5 is the strongest level of intensity for a hurricane in the Saffir-Simpson Scale, meaning that the island endured sustained winds of over 252 km/h, with gusts above 300 Km/h. The strength of Irma had no precedent in its intensity. It hit and caused death and destruction never before seen, in many of the Lesser Antilles – Barbuda and St. Marteen were flattened, among many others – and caused more death and significant destruction in Haiti and Cuba. In Puerto Rico, about a third of our municipalities in the north-east were hit very hard. Irma ripped through the island-municipality of Culebra, one of our priceless environmental and touristic patrimonies. Irma caused major critical damages, particularly to the electricity grid of the main Island. Already, the government was over-extended in its capacities to address these damages.

Not a week passed after Irma had hit, and another storm was detected leaving the hurricane formation area of the Cape Verde Islands in the eastern Atlantic. They call her ‘María’. For Puerto Ricans, this a strange omen.

The island’s history is rooted in the culture of its Taíno native civilisation, which named its goddess of chaos and disorder Guabancex, whose most violent manifestation of displeasure was the Juracán, i.e., the meteorological phenomenon we today call ‘hurricane’. Now, keep in mind that the general legacy of the Taíno was violently almost-erased by the Spanish-Catholic conquest, which ultimately led Puerto Rico to become thereafter a key port for the horror of slave-trade for over two centuries. The ‘discovery’ left the island not just with a trauma that is still being processed, but with a complex biological and spiritual make-up that is composed of various imported religious beliefs, mainly Roman Catholic and later of Christian evangelical. Early on, that violent import led to the creation of Afro-Caribbean spiritual practices along with other syncretic attempts to recover the heavily subdued matrilineal traces of indigenous Taíno practices, hinging primarily on medicinal plants and community-based agriculture (Villanueva, 2001 and Benedetti, 2013).
Over time, with those imposed, subdued, and suppressed beliefs, and after many tropical storms and hurricanes through the centuries, always coming years apart from each other, named with banal and inconsequential Western names assigned in random order by a predetermined list, the name ‘María’ immediately causes concern and premonition.

My parents and sister expressed their worries by WhatsApp by the hour, and the week of sensationalised forecasts was torturous, for them, and for me. So, just two weeks after Irma hit, in the early morning of September 20, María was just south of the south-east coast, set to slowly cross diagonally in a north-easterly direction, right through the very middle of the island, from coast to coast. María, like Irma, also made landfall as a Category 5. But instead of traversing only the east coast as Irma did, María went right through the island diagonally, southeast to northwest. For over twelve hours it sustained winds of 275km/hr, with gusts that were far stronger.

The damage was truly infrastructural, some would say of biblical scale. My family was spared bodily harm, but expressed that it was the longest, loudest, most nerve-wracking 12 hours of their lives – like having
a jet engine in your living room roaring for far too long. An estimated 2975 persons were killed \(^{68}\), the flora and fauna were decimated, and the island’s electrical grid was totally destroyed, leaving the capital of San Juan without electricity for three months, and up to 70% of island without power for over six months. The damage in Puerto Rico was estimated to be of 75 billion Euros. The long-term damage to the natural ecosystems and to the economy are still being assessed.

There is one more detail: two years before these two unprecedented storms, in 2015, Puerto Rico was attempting to declare bankruptcy due to a national debt that had reached 60 billion Euros. I say ‘trying’ because, unlike Iceland or Greece or Argentina, Puerto Rico is a colony of the United States, thus without geopolitical or democratic sovereignty. If you are doubting my use of the word ‘colony’ to describe Puerto Rico, let me just say that as a result of that ‘trying’, instead of creating a fair process of economic restructuring, the President of the United States, Barack Obama, unilaterally enforced an Oversight Committee, literally a *Junta*, of five *un*–*elected* officials (headed by a Russian bankruptcy expert who had just managed the Ukrainian financial crisis) to have full power and oversight over the people of Puerto Rico, including over our elected governor and parliament. \(^{69}\)

The situation is of course completely disproportionate, no longer a theoretical metaphor, but an embodied one, as a *crisis of scale*. In other words, Puerto Rico, a small island of about the size of metropolitan London with a decreasing population of about three million, has now a debt of about 135 billion Euros.

This crashing confluence of Puerto Rico becoming the latest target of global finance speculation, along with the unprecedented cataclysm of


two Category 5 hurricanes within two weeks, prompted me to title my research travel report Slow Motion Nuclear Explosion: the superdecompression of colonial memory in Puerto Rico, and beyond (Explosión Nuclear a Cámara Lenta: superdescompresión general de la memoria colonial, y la de Puerto Rico, November 17, 2017... for the complete text go online to http://www.intransitivejournal.org).

The report had three parts. The first part is a preface proposing that the twin hurricanes Irma and María are obvious manifestations of the full complex of economic and environmental toxicity that is Global Warming. I argue that as such, the hurricanes are an index that point to a coming large-scale ‘super-decompression’ of colonial memory, one that has been violently suppressing colonial violence, in this case, upon the Puerto Rican psyche as well as that of the Caribbean. The ‘nuclear explosion’ that I described is not just about the visual destruction and haptic sensation of radiation the two hurricanes have left behind. I am referring to the slow and viral explosion that so many around the planet are facing due to the threat of Global Warming... about the radiation of contradiction that the so-called free market is distributing as its chief instrument, as a radicalization of climate change to continue forth with Global Warming as the key, and insidious instrument, to drive that bizarre and incongruent form of economic ‘growth’. 

Allow me to say that again.

It is clear that a significant, powerful group of industrials are foreseeing Global Warning as a generator of profit.

Have we gone mad?

We can only assume that living in that future will then either require secure and gated ‘greenhouse’ colonies for the wealthy (as planned by the best and brightest architects and developers) 70, or a planned evacuation of billionaires to settle in ‘greenhouses’ in a colonised Mars

(as planned by Elon Musk)\textsuperscript{71}, as the projected framework of ‘living’ as business model.

(Fig. 31) Montage, architectural renderings of future greenhoused colonies on the Netherlands and on Mars. Source: Effekt & Space X, respectively.

With those already-manifesting assumptions, I refer to the metaphor of ‘nuclear explosion’ as associative signifier for the far-reaching dissociative impacts of such ‘visions’ now reaching disparate geographic locations around the planet. ‘Nuclear’ in that the fragmented, remote distribution of these events, even in our age of the internet, are being projected both as far-reaching and yet unrelated.

Stability landscape showing the pathway of the Earth System out of the Holocene and thus, out of the glacial–interglacial limit cycle to its present position in the hotter Anthropocene. The ‘fork in the road’ is shown here as the two divergent pathways of the Earth System in the future (broken arrows). Currently, the Earth System is on a Hothouse Earth pathway driven by human emissions of greenhouse gases and biosphere degradation toward a planetary threshold at ~2 °C, beyond which the system follows an essentially irreversible pathway driven by intrinsic biogeophysical feedbacks. The other pathway leads to Stabilized Earth, a pathway of Earth System stewardship guided by human-created feedbacks to a quasi-stable, human-maintained basin of attraction. ‘Stability’ (vertical axis) is defined here as the inverse of the potential energy of the system. Systems in a highly stable state (deep valley) have low potential energy, and considerable energy is required to move them out of this stable state. Systems in an unstable state (top of a hill) have high potential energy, and they require only a little additional energy to push them off the hill and down toward a valley of lower potential energy. PNAS, 2018.
Recently, there have been efforts to begin to publicly address the chain reaction, or ‘potential tipping cascades’\(^{72}\) that this destabilising explosion may represent. Ironically, its terminology is now going from the more ambiguous good and bad ‘greenhouse effect’ to a state of emergency in which, within the next 12 years \(^{73}\), the greenhouse effect becomes its earlier namesake, hothouse, or more specifically, ‘Hothouse Earth’ (Fig.32). Notwithstanding these recent, ironic, but necessary efforts, the disjunction and isolation of the network of events is still aggressively and incongruently pursued by powerful interests, proving to be a very effective way of fragmenting and dissociating the otherwise obvious and steadfast causation of Global Warming; i.e. the violent and dissociative colonial impulse that still drives the market economy, even at the peril of any worthwhile quality of life. Puerto Rico, and the Caribbean, seem to be already a scale-model of that toxic colonial contradiction now being called Hothouse Earth.

That is why the second part of the report is a very brief overview of Puerto Rico’s own colonial history, one I will expand upon in the following section. But before doing so, I leap to the third part of the report: a diary that describes the specific purpose of my research while in Puerto Rico, which was to document any encounter that represented how the hurricanes affected the cultural or agricultural infrastructures on the island, particularly any that relied upon industrial greenhouses for operation. During my 10-day travel I visited with government officials, small farmers, cultural actors, and with educators working in the trenches of rebuilding the Island from cultural, agricultural, and agroecological standpoints. The encounter that affected me the most occurred on the 5\(^{th}\) day. Still shocked and not in the most scientific state of mind, I naively wrote the following remarks:

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\(^{73}\) See the Oct. 6, 2018 IPCC UN. *Summary for Policymakers — Global Warming of 1.5 °C: special report on the impacts of Global Warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.* [by Myles Allen (UK), Mustafa Babiker (Sudan), Yang Chen (China), et al.](https://www.ipcc.ch/sr15/chapter/spm/) Accessed 8 Oct. 2019]
7.nov.2017
Hoy fui al Jardín Botánico de la Universidad de Puerto Rico y me recibe con gran gentileza el Prof. Dr. Melvin Carrión que tiene la dificilísima faena de, entre muchísimas otras cosas, restaurar el complejo del jardín. Destruído casi completamente. Allí tres tragedias… antes de los huracanes, ya casi todo había sido abandonado, la crisis económica ya había comenzado la devastación. Y luego… los huracanes. Primero, la despiadada indiferencia de la economía global y su incongruente insistencia en destruir la educación y/o crear la pobreza de la deuda y la ignorancia. Luego, la cólera del calentamiento global. Tenemos culpa en ambas dimensiones. Y entonces… Dos huracanes, uno detrás del otro. El estado del Jardín Botánico es un emblema de los problemas en la Isla. Pero es allí que me encuentro con dos razones maravillosas que me llenan de esperanza… primero me presentan a un maestro, el Profesor Luis Santiago, con sus alumnos y sus colaboradores. Ellos, con lo que podríamos llamar caritativamente ‘recursos limitados’, han dado vida nuevamente, inmediatamente, al Jardín en tan solo un mes, ya sus hortalizas empiezan a florecer. Lo han hecho por medio del ‘Huerto Urbano’. Una de las cosas más lindas que he visto en mi vida. Empecé a compartir y escuchar las inimaginables dificultades que han tenido antes y después del huracán (no como queja, simplemente contestando mis preguntas). Me ofrece el Profesor Santiago llevarme a ver el resto del Jardín y el horrible desastre. Me (re)encuentro con otra de las cosas más lindas que he visto en mi vida, la colección de esculturas del jardín, sobreviviendo en paralelo con la devastación. Juro que ha sido un momento profundo. Ver el arte como complemento… usualmente en estos jardines esculturales, la flora complementa el arte… en esta ocasión se veía el arte intentando devolver el favor… una tragedia preciosa.
Today I went to the Botanical Garden of the University of Puerto Rico and I am received with warm kindness by Prof. Dr. Melvin Carrión who has the most difficult task, among many others, to restore the Botanical Garden complex. It was destroyed almost completely. There are three tragedies ... before the hurricanes, almost everything had been abandoned, the economic crisis had already begun the devastation. And then ... the hurricanes, one behind the other. The state of the Botanical Garden is an emblem of the problems on the Island. But, two wonderful reasons fill me with hope ... first I am introduced to a true teacher, Professor Luis Santiago, with his students and his garden collaborators. They – with what we could call charitably ‘limited resources’ – have given life again to the Botanical Garden, immediately, in just one month. They have done it through the ‘urban orchard’. One of the most beautiful things I’ve seen in my life. I started to share and listen to the unimaginable difficulties they had before and after the hurricane (not as a complaint, simply answering my questions). Prof. Santiago offers to show me the rest of the disaster. I (re)encounter another of the most beautiful things I’ve ever seen in my life – the collection of sculptures in the Garden, all surviving in parallel with the devastation! I swear it has been a profound moment. To be with the art as a ‘nature’ ... usually in these sculpture gardens, the flora complements the art ... on this occasion art was trying to return the favour ... a precious tragedy.
The National Botanical Garden of Puerto Rico, located at the University of Puerto Rico’s Experimental Station (administered by its Department of Agriculture, U.P.R.) is not just a large swath of land of 120ha serving as public, academic, and research complex within the periphery of San Juan’s sprawling metropolitan area. The Botanical Garden also hosts Puerto Rico’s largest single collection of public sculpture. The visit strongly affected, if encouraged me to continue to revise my conceptions of ‘greenhouse’ within the complex of colonial memory, as well as to reconsider which visible and invisible forms of perception may re-mediate the forces of Global Warming through sculptural exploration. Like any other botanical garden, Puerto Rico’s is of course a partly invisible greenhouse – only that in Puerto Rico the ‘tropical’ environment that most botanical gardens work to simulate by way of visible greenhouses is of course a natural condition. That said, the scientific environment that the Experimental Station and the Garden itself requires the construction of laboratories in the form of greenhouses. But many of these greenhouses are curious because they are not insulated from the outside by glass or polycarbonate, but are of a
porous mesh. These ‘porous’ greenhouse laboratories that supplemented the controlled study of tropical specimens were in a strange state of ruin: strange because of the disarming beauty of decay, as something seemingly possessed and inhabited by ghosts, especially late in the day, when the sun would set.

Still, most of the native plants that the Garden conserved had been razed. And, despite Prof. Santiago and his staff’s invaluable efforts, many of the areas of research and conservation, that were already in great decay due to the economic crisis, where seemingly finished off by the storms. One particular laboratory, the Garden for Medicinal and Venomous Plants (Fig.33), which had no physical greenhouse shell, was particularly present in its state of decay. Its premises are defined by a small pavilion designed by architect Maria Rossi. I first asked Prof. Santiago about the it, and he explained that it is a facility that was conceived initially in the late 1930s largely as a donation by then Prof. Luis Torres Díaz based on his extensive collection of medicinal and venomous plants, several of which were endemic, adopted from indigenous ritual and medicinal use of Taíno and Afro Caribbean traditions on the island. The medicinal garden itself as academic and experimental site was later built in 1954, and directed for over four decades by Prof. Esteban Núñez Meléndez as a laboratory as well as a ‘living museum’. In the following days, I had a chance to meet and speak to architect Rossi, and she explained that it was not until 2003 that she was commissioned for the renovation of the medicinal garden as space for scientific experimentation and cultural interface. She designed and oversaw the building of the small clean-room laboratory and open-air conference room that were ultimately installed. The building was inaugurated in 2007. It of course was intended to bring new life to that area of Botanical Garden as a whole, in no small part because of renewed interest in bio-pharmaceutical approaches by the Medical and Pharmaceutical Schools of the U.P.R. But she explained that the building only operated for a few years, until the economic crisis overtook the island’s economy, and with it the budget of the U.P.R., turning the ‘living museum’ into a forgotten ruin of ghostly decay, which she herself admitted to loosely forget about in order to avoid the sadness and frustration that its demise provoked.
Rossi’s passing comment hit me hard. Not just because the visit to the devastated Experimental Station and Botanical Garden strongly influences the way I continue to unfold my research and artwork… but it also hit me hard because her suggestive act of ‘forgetting’, as selective, suppressive amnesia, that I deem we find to be the core operational directive that colonial (and neo-colonial) enterprise relies upon. I do not say this to belittle Rossi’s sentiment. Absolutely on the contrary: hers is that understandable if necessary human sense of self-preservation, of protecting oneself from the pain of trauma, that is entwined to memory, and that I will argue requires the revision of metaphor in the context of greenhouse and Global Warming.

I suppose that this seemingly minor encounter is why in the report, as intuited before, that I claim ‘greenhouse’ to be a ‘colonial and industrial anarchive’ [see c.(B).]… and now Puerto Rico, not unlike that kind ‘greenhouse’, has become yet another forgotten ghost of Global Warming. What I mean is that the violence of ‘forgetting’ is inherent to the notion of anarchive. And, that is why I make particular reference to it as it is proposed by Derrida. He calls of anarchive a ‘spectral’ condition of ‘superrepression’, of a sort of amnesia that suppresses-away memory, all operative qualities within the general concept of the archive itself. Very much in the language of ghosts, of hauntings, in the construction of history, I will address the technological aura of ‘greenhouse’ not just as a unifying ghost of things dead from the past, or as a messianic ghost promising our salvation as the obsolete notion of phantasmagoria…I will instead here offer alternative memories that begin with the violently suppressed histories of Puerto Rico, looking to indeed unpack and interpenetrate those the divisive invisibilities that are reflexive of Global Warming. I do so to, eventually, unfold an anarchive replete with that putrescent contradiction of colonial intent.
The Taíno and the Carib Doppelgänger

As we arduously search for ways to reposition humanity in relation to nature in lieu of this kind of Western, modern, toxic, messianic notion of technology, many points of rupture between human and nature begin to emerge along the history of ‘greenhouse’ and Global Warming. We could start 8 or even 12,000 years ago with the first civilisations and their early forms of agriculture. But instead, I will bring you through another, rather strange, recurring rupture I encountered in my research, really throughout my own life, one that hits closer to ‘home’.

Colonialism is deep. It has laid its tentacles not just on all species and resources, but on many, if not most, nations and cultures, a number of which are today themselves the most adamant neo-colonial powers – powers that now far surpass any traditional notion of national interest or boundaries. In that light, Puerto Rico (Borikén, how the island was called before the ‘discovery’), along with a handful of other nations including those in the Caribbean, is enduring a particularly dubious trajectory of colonial and neo-colonial legacy that, if closely analysed, can portray, through lesser-known versions of its history, a productive unfolding of the often unperceived conditions, forces, and effects that perpetuate the long and insidious toxicology of colonial intent; the one that amputates humanity from environment. To do so, I will discuss my, albeit amateurish but sincere, perspective on the role of the Taíno and its binary counterpart, the Carib native – the civilisation after which the Caribbean is named. Namely, after offering a reflection about the almost-erasure of the Taíno civilisation, I will identify two references to the Carib: a minor one made by Alexander von Humboldt, and a more influential one made by Jean-Jacques Rousseau. I will then refer to a third reference to the Carib made by Bernard Stiegler – one that stems from Rousseau – to contrast from those references made by both Humboldt and Rousseau as to how the Carib becomes an instrument, neither animal nor human, that still shapes contradictory notions of memory,
and of the *natural world*. I aim to reflect upon how such notions continue to have profound, misleading implications for the way in which that so-called *natural world* continues to be conceived in terms of interior | exterior, how it engenders colonial memory to be the fundamentally flawed ‘dynamic’ that energizes Global Warming, and how ‘greenhouse’ is its most pure and ‘essentially’ flawed manifestation.

### The positive memory of the Taíno

As far as I can remember, as early as kindergarten, I can discern vague mental images of being taught stories about our Taíno ancestors — the native civilisation that lived across what we now call the Greater Antilles (Cuba, Jamaica, Haiti, Dominican Republic, the northern Virgin Islands particularly St. Croix, and Puerto Rico). Versions of the stories varied widely. Some came from impassioned teachers who wanted to express the peaceful virtues of this relatively short-lived society (its development occurred between 1200-1500 AD), and who included accounts of the horror that the Taínos endured (without the bloody details, we were children after all). Most other teachers — usually coached from within the overarching Spanish-catholic mantle that draped most moral and ethical languages in Puerto Rico, as in many parts of the Central and South Americas — downplayed these violent events, underscoring the greatness of the so-called ‘Age of Discovery’ or ‘Exploration’ as the beginning of modernity and of human enlightenment. The Carib inhabits that same vague mental image. Varying storylines along with the Taíno, the Carib is cast as the former’s ‘nemesis’: a rival civilisation that would often come by canoe, ‘easily’ hopping hundreds of kilometres northward, island by island, from north-eastern continental South America through the Lesser Antilles, to wage war against and harm the ‘peaceful’ Taínos… after all, Taíno means ‘Men of the good’.74 Puerto Rico was the first island with a large Taíno population to be encountered on that northward journey from the Lesser Antilles, and thus became a zone of

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confrontation between the warring tribes.

Without a doubt, on these storylines, the account of pre-Columbian life in the Caribbean was deliberately diminished as irrelevant. No less in relation to how the Spanish ‘discovery’ (also referred to as the ‘conquest’), although courageous, was portrayed, not as the unwitting and accidental stumble of Columbus unto the Bahamian Archipelago (who thought he and his band were on the eastern coasts of India and China), but as the triumph of Spanish and European prowess, and of their ‘most benevolent’ Imperial capacity to explore and to colonise. Case in point, consider how to this day it is common to clumsily refer to indigenous American cultures as ‘Indians’. In that ‘spirit’, the conquerors, conquistadores had the mandate to ‘cultivate a civilised’ world from the ‘unlimited’ natural wealth the lesser beings who inhabited the ‘New World’ were ‘unable’ to capitalise upon, since, after all, they were not really there-there, and would become not-animal/not-human ghosts for labour.

Case in point: from 1492 to 1502, Columbus embarked on five crossings with the unequivocal intent of violently exploiting the land and the peoples he encountered under the guise, and with the weapon of religious indoctrination. In his very first letter to his financiers King Ferdinand and Queen Isabella after having arrived from his first transatlantic crossing, dated March 15, 1493, he announced that the Taínos (indeed incorrectly identified as ‘Indians’) were ‘fearful and timid… guileless and honest… destitute of weapons, which are entirely unknown to them, and for which they are not adapted; not on account of any bodily deformity, for they are well made, but because they are timid and full of terror.’ Columbus’ royally certified attitude – in combination with the unforeseen illnesses he and his gangs carried within their bodies and genetic make-ups – set off a virus of torturous homicidal barbarity in the Caribbean that led to the unspeakable and almost-complete annihilation of the Taíno natives within a few decades, all by way of transmittable illness, brutal labour, rape, or flat-out torture for entertainment.

Estimates of pre-‘discovery’ Taíno populations across the Antilles vary widely, from the low hundreds of thousands to the millions. And despite a consensus, as recent as the 1990’s, that the Taínos were totally annihilated, it is now surmised, with genetic studies, that a few pockets of surviving groups must have found shelter in remote, unsettled regions and other smaller islands, and that they had gone through a long-drawn process of ‘mestización’ (mixing of Caucasoid and Native American descent) with the new European, and later with African arrivals during the ensuing 400 years. New data even indicates that Puerto Ricans still hold significant Taíno descent, strictly through maternal lineages.\(^76\)

Notwithstanding, sobering estimates of an 80% to 90% mortality rate within the first fifty years of Columbus’ arrival still stand, displaying an atrocity of a scale and speed that has seldom played out elsewhere in recorded human, or animal, deliberate behaviour.

Within this story, it is critical to keep in mind that the colonial economy of exploitation of the Caribbean – of its natural resources, in human and non-human form – has roots, of course, in the mining of gold and other precious minerals. But in parallel, the ‘discovery’ also hinged greatly upon agriculture, especially for the subsistence of the conquering forces, as well as for the ensuing transplantation and exploitation of crops and their goods through trade. In his letters, Columbus himself praised the surprising bounty and technical effectiveness of how Taínos, particularly the women (who were even referred to as ‘macho women’ by the conquistadores for their strong, often superior role in Taíno society\(^77\)), sustained themselves by being highly skilled in cultivating the land and small game like fish, producing a variety of managed crops, including yuca (cassava), squash, beans, peppers, peanuts, pineapples, pumpkins, cotton, and of course tobacco, as well as collecting palm nuts, guavas, and zamia roots from the wild.

Such a technical skillset was immediately instrumentalised by the


Spaniards, who seamlessly induced forced labour – either by marriage and/or enforcement – to produce enough food for both the troops and for export. And, this was the root cause of what was soon to be called, ironically, the *Encomienda* or ‘Entrustment’. As a way to try to control the abuse of what was now – whether human or non-human – the all-encompassing property of the Crown, the newly arrived *conquistadores* (conquerors) were required to follow a process of colonisation that was guided by the awarding of vast swathes of land under the rule of law of specific production and trade, which required those new land 'owners' to restrain themselves from generally abusive practices upon their new 'subjects' and from measures of forced tribute to be required from their now slave-labourers. The response from the ‘entrusted’ landlords was of such disregard to the Crown, and of atrocity, that even several Catholic missionary clerics could not believe the extent of the sadistic carnage. Of this handful of clerics, Bartolomé de las Casas soon wrote the well-known, but often forgotten, incendiary report – if not flat out plea – to the Crown titled *Brevisima Relación de la Destrucción de las Indias* (‘A very brief account of the Destruction of the Indies,’ 1522).

(Fig.34) Corrals for harvesting fish by Taíno communities, according to the etchings of Theodore de Bry, of Historia de América by M.Roux de Rochelle; Imprenta de la Guardia Nacional, Barcelona, 1841, p.43. Source: Archivo Nacional de Puerto Rico.
(Fig. 35) Reprint of Frontispiece by Joos van Winghe and Jean Théodore De Bry, of Brevisima Relacion de la destruyccion de las Indias (Short Account of the Destruction of the Indies) by Bartolomé de las Casas, 1552. Ed. José y Vicente López Enguádanos. Real Imprenta de Madrid, 1791. Source: Archivo Nacional de P.R. Public Domain.
(Fig. 36) Cover of ‘An historical and true account of the cruel massacre and slaughter of 20,000,000 of people in the West Indies by the Spaniards’, translation from the French version of 1620 of de las Casas’ Brevísima Relación… illustration is #36 of series by Jean Théodore De Bry, published by J. Boller, 1898. Source: Widener Library, Harvard. Public Domain.
Muy alto y muy poderoso señor: Suplico a Vuestra Alteza lo reciba y lea con la clemencia y real benignidad que suele las obras de sus criados y servidores que puramente, por sólo el bien público y prosperidad del estado real servir desean. Lo cual visto y entendida la deformidad de la injusticia que a aquellas gentes inocentes se hace, destruyéndolas y despedazándolas sin haber causa ni razón justa para ello, sino por sola la cudicia y ambición de los que hacer tan nefarias obras pretenden, Vuestra Alteza tenga por bien de con eficacia suplicar y persuadir a Su Majestad que deniegue a quien las pidiere tan nocivas y detestables empresas; antes ponga en esta demanda infernal perpetuo silencio, con tanto terror que ninguno sea osado dende adelante ni aun solamente se las nombrar.  

Most high and most mighty Lord: I implore Your Highness to accept [this report] and to read it in the spirit of clemency and royal benevolence with which Your Highness traditionally approaches the works of those of Your Highness’s subjects and servants whose only desire is to serve the public good and the interests of the Crown. It is my fervent hope that, once Your Highness perceives the deformed extent of the injustices suffered by these innocent peoples and the way in which they are being destroyed and dismembered unjustly and for no other reason than to satisfy the greed and ambition of those whose purpose it is to commit such nefarious atrocities, Your Highness will see fit to supplicate and persuade His Majesty to refuse all those who seek royal license for such evil and detestable ventures, and to put a stop once and for all to their infernal clamour in such a way that nobody will henceforth dare to make such a request nor even to mention ventures of this kind.
De las dos islas de San Juan y Jamaica

Pasaron a la isla de San Juan y a la de Jamaica (que eran unas huertas y unas colmenas) el año de mil y quinientos y nueve los españoles, con el fin y propósito que fueron a la Española, los cuales hicieron y cometieron los grandes insultos y pecados susodichos, y añidieron muchas señaladas y grandísimas crueldades más, matando y quemando y asando y echando a perros bravos, y después oprimiendo y atormentando y vejando en las minas y en los otros trabajos hasta consumir y acabar todos aquellos infelices inocentes, que había en las dichas dos islas más de seiscientas mil ánimas, y creo que más de un cuento, y no hay hoy en cada una docientas personas, todas perecidas sin fé y sin sacramentos. 79

Of the two Islands of Puerto Rico and Jamaica
In 1509, the Spanish, with the same purpose in mind as they had when they landed on Hispaniola found their way to the two verdant islands of Puerto Rico and Jamaica, both of them lands flowing with milk and honey. Here they perpetrated the same outrages and committed the same crimes as before, devising yet further refinements of cruelty, murdering the native people, burning and roasting them alive, throwing them to wild dogs and then oppressing, tormenting and plaguing them with toil down the mines and elsewhere, and so once again killing off these poor innocents to such effect that where the native population of the two islands was certainly over six hundred thousand (and I personally reckon it at more than a million) fewer than two hundred survive on each of the two islands, all the others having perished without ever learning the truths of the Christian religion and without the benefit of the Sacraments.
In that ‘brief relation’ documented by de las Casas, in his travels across the Caribbean, he made specific anecdote about the brutal treatment of Anacaona, one of the regional leaders of the Taíno…

Anacaona had become Cacique. Her status as the highest figure in the social hierarchy of the Taínos – a title shared amongst other regional Caciques of the Taíno groups distributed across the Caribbean, mainly divided by regions of each island – was probably strengthened by the strong preference for matrilineal descent in the Taíno society. Taíno caciques usually passed inheritance to the eldest children of their sisters. Her troubles began when her ‘husband’ Caonabo, suspected of having organized a recent attack on La Navidad (the very first Spanish settlement of the ‘discovery,’ on what today is the northern coast of Haiti), was captured and shipped to Spain. He apparently died in shipwreck during the journey, an end shared by many other Taíno leaders. The Taínos, who were already being deceived and abused by the conquerors from the get-go,
revolted and opted to make long war against them. Already by 1503, a meeting took place between 80 caciques, including Anacaona, and the Spanish Governor of Hispaniola. Anacaona and her bohíques (Taíno noblemen) were arrested there — all were accused of conspiracy for resisting occupation, and thus sentenced to be executed. Right then and there, the governor ordered the house where the meeting took place to be set aflame, burning them alive. Anacaona was taken aside and offered ‘clemency’ if she would give herself as concubine to one of the governor’s men, which was a common practice in the era. Standing with her fellow Taínos in solidarity, the cacique Anacaona chose execution over collusion with her enemy. Anacaona was executed by hanging. She was 29 years old. Her refusal cemented her legend, her name becoming a war cry of the Taínos’ brief revolution, and she still holds a privileged place in Caribbean mythology.

The negative memory of the Carib

Along such folkloric storylines, the aforementioned geographic material help us re-produce a broad and still evolving history of abuse and trauma, of prowess and discovery around the Taíno. For me, these blurred origins in the Taíno, and of what I refer to as my home of Puerto Rico, will always remain a meandering, indirect conflict vaguely yet persuasively operating within me. Therefore, I feel required to reflect further upon what may have caused this ghostly blurring of the Taíno, of whether it is due to the victorious erasure by the Spaniards, or of an eventual systemic indifference towards Taíno traces on the part of the ensuing colonial interest of the Europeans and North Americans that followed the Spanish trail to the Americas. The ambiguity often lies in contradictory data from academic studies, some of which claim that Taínos had been totally eradicated as early as 1520, while others estimate that up to 40% of the Spaniards in the Caribbean married Taíno women in the years thereafter. Such contradictory claims only further conjure a historical ghost — a rumour of a peaceful, sustained society
that the Taínos created, and which Columbus described – that will always remain insufficiently conjured by the limited three-hundred-year duration of the Taíno society across dozens of islands, and by the even more limited existence under the Spanish conquest. As an immediate measure of that ghostly byproduct, of that swift and almost ‘perfect’ erasure of the Taínos, the Spanish had to then search for new subjects to fulfil their ongoing, increasingly seemingly-narcotic dependency on forced labour, homicide, and genocide.

(Fig. 40) Tabula Terre Nove Martin Waldseemüller. Strasbourg, 1513. Source: Wellcome Collection.

For obvious geographic reasons, particularly after the initial division of the west and the east as a way to partition the bounty of the ‘discovery’ between the Spanish and Portuguese (see Tratado de Tordesillas, 1494), the immediate southward invasion led the conquistadores to the Carib peoples. The Caribs were already known to the conquistadores as a tribe adversarial to the Taínos. The Caribs, which up until the 20th century were generally referred to as a singular society, became differentiated, mostly
linguistically, into two groups. The ‘Mainland Carib’ or Kali’na live to this day across northern South America, not as singular group, but as a complex amalgamation of tribe-nations that are estimated to have been inhabiting the region for as long as two thousand years, speaking a range of languages that stem from the Carib root language. Likewise, in their pre-Columbian migration north, prior to the arrival of the ‘discovery’, Caribs invaded the Lesser Antilles, conquering the territory of the Arawaks, who had inhabited the islands prior. The displacement of the Arawaks made them the ‘Island Carib’, or Kalinagos, who developed a hybrid of the Arawak language and remained on the Lesser Antilles thereafter.\(^8\) The generalisation that the Kali’na and the Kalinagos were thought of singularly as Caribs may be attributed to a quality of resistance, of their being a more resilient, combative group that did push back and sceptically confront the conquistadores, inspiring both dread and respect. This resulted, perhaps, in the memorialization of the Carib name in the region of what we today refer to as the Caribbean, but also in the fact that many of their Nations continue to inhabit, albeit ever-more precariously, areas of today’s Venezuela, Colombia, Guiana, and Brazil.

That quality of combative resistance and resilience of the Carib, further cemented by observed rituals of anthropophagy (also called cannibalism in their honour), earned them the reputation of being ‘savages’, largely in dialectic contrast to the easily dominated, peaceful, Arawaks and Taínos\(^8\)\(^1\). In due time, as the Enlightenment started to kick-in in the 17\(^\text{th}\) and 18\(^\text{th}\) centuries, the strong convergence of religion, science, and philosophy began to see through conceptualisations of ‘nature’, under the divine umbrellas of natural history, natural law, and natural science, all standing above the violent carnage of the ‘discovery’. It is here where the dichotomy of the Carib and the Taíno becomes a significant and influential object of experimentation, observation, and conceptualisation, with a significant role in supporting the fundaments of the Western conceptualisation of the ‘natural’. Such is the structural role of the Caribbean indigenous in the idea of the natural that I am able to contem-

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poraneously insert here a triage of brief encounters. First, I will reflect upon the opposing impressions of Rousseau’s Carib and of Humboldt’s Carib. I will then follow by triangulating that opposition with a more recent reference to Rousseau’s Carib made by Stiegler.

Recent biographical accounts of Alexander von Humboldt’s life have re-emerged with significant force. Such accounts and re-contextualisations remind us of Humboldt’s extraordinary influence on shaping any number of disciplines, from geography to the then-emerging natural sciences. So influential was his work that the very philosophical conflict between rationalism and empiricism, of Encyclopaedism and Natural philosophy, was mediated by his approach, named ‘Humboldtian Science’. Humboldt expressed that:

‘The great problem of the physical description of the globe is the determination of the form of these types, the laws of their relations with each other, and the eternal ties which link the phenomena of life, and those of inanimate nature […] The goals for which I strove were to depict nature in its prime traits, to find proof of the interworking of natural forces, and to achieve a sense of enjoyment which the immediate view gives to sensitive man…’

This perspective, enacted through his ‘scientific travel’, was driven by a passion for rigorous observation, and the ensuing ‘personal narratives’ impacted any number of pivotal thinkers, from Kant and Goethe to Darwin and Haeckel, all the way to Jefferson and Emerson. They enjoyed Humboldt’s specific modes of precise yet tolerant description, recollected mostly in his opus, *Voyage aux régions équinoxiales du nouveau continent* (or the *Personal Narrative of travels to the Equinoctial Regions of America during the years 1799-1804*) which provided new and nuanced views of the ‘discovered’ world as an ‘invention of nature’.

Already by the mid-1700’s, Humboldt, following his extensive travels through Central and South America (among many other regions around the globe), described with unusual tact and perspective (even by today’s standards) the most intricate aspects of the flora and fauna, the

societies, and the environments that he encountered, conscious of it all having being there already long before his arrival. From his description of the flora of the Andes (memorialised in his diagrammatic *Essai sur la géographie des plantes equinoxaux*:* Tableau physique des Andes et pays voisins* of 1805 (Fig. 41), *Geography of plants in tropical lands. A tableau of the Andes and neighbouring regions*) to his analysis of the presence and legacies of cultures that have inhabited the ‘discovered world’ long before the ‘discovery’, he displayed a degree of excitement, humility, and empathy that was most often completely absent from the emerging disciplinary languages of science. For instance, von Humboldt explored ancient writings of the Incas by describing their complex understandings of astronomy and mathematics. More presciently, he also explored traces of the Caribs, particularly noting how their languages conceived of complex, abstract concepts such as the future and eternity – in his words, ‘languages that exuded richness, elegance, force and tenderness.’

(Fig.41) v.Humboldt & Aimé Bonpland, Geography of plants in tropical lands, 1805 (section-view of the Chimborazo stratovolcano in Ecuador). Source: Anne Buttimer, ‘Alexander von Humboldt and planet earth’s green mantle’, Cybergeo: European Journal of Geography, Epistemology, History, Teaching, document 616.

Conversely, just a couple of decades before von Humboldt published his *Narratives*, Rousseau famously began to enact his ‘thought experiments’ through the *state of nature*. The *state of nature* was, and still remains, a recurrent conceptual object of mental projection used broadly for testing possible conditions of what the lives of (European) humans might have been (or could become) in ‘nature’ without ‘society’. In order to structure these mind experiments for his *Second Discourse*—experiments that are at the root not just of anthropology but also of social, economic, and political science enshrined in his *Discourse on the Origin of Inequality* (1754) and *The Social Contract* (1762)—Rousseau needed a ‘natural’ or ‘originary man’. In his *Second Discourse*, he made an instrumental objectification.

He turned the indigenous Carib, not into a specimen of observation, but into an entire support structure for speculation, into a *phenomenotechnology*. He conceptualised and instrumentalised a ‘fiction’ of the Carib as a placeholder for generalising about other ‘discovered’ civilisations in the Americas by relying primarily on missionary writings from the 1600s made by Jean Baptiste Du Tertre. In contradiction to Humboldt’s contemporaneous discussions with Goethe about the importance of making ‘observation’ not to be limited to imaginary or laboratory isolates—*“to the immense variety of real phenomena, so as to produce laws dealing with the very complex interrelationships of the physical, the biological, and even the human”*—Rousseau’s source material became an abstraction from the writings of Du Tertre, which the former used to build his own narrow Carib as an ‘informant’ that would ‘speak’ to him from that unreachable distant world of the *state of nature*. I find this narrow abstraction of the Carib to become a toxic act that would haunt the understanding of nature for centuries to come.

The potent, influential framework for speculation that Rousseau produced was based on a vague and insufficient notion of the Carib, intended as a moral dictum to patronisingly award the Carib the dubious honour of exemplifying the ‘savage stage’ of human development,

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as an optimal placement between the extremes – between the early animal-like ‘ape-man’ and the future decadent ‘modern man’.⁸⁶ Such a dubious elevation of the Carib’s value, particularly as instrument of observation for enacting the ‘state of nature’, brings about a series of problems, not least one that instantiates the rupture of genuine interrelations between the physical, the biological, and the human that science ought to be bound by.

Peter Melville writes that it is with this symmetrical and flattened abstraction of the Carib that Rousseau draws his instruments to speculate, or rather ‘extrapolate boldly’ on how the Carib would be that ‘savage’ who gives us the moment right before the end (or beginning) of nature, as a state of suspended animation where these not-quite-humans/not-quite-animals existed as a classificatory byproduct of their own lack of foresight or understanding of the concept of ‘future’. Once again, this contradicts Humboldt, not just on the primacy of observation in science, but more specifically on the sophistication of Carib languages and their grasp of the future. Rousseau conceived of the Carib (in words that were later echoed by Svante Arrhenius in 1909, cited at the entry of this convolute) as a creature whose plans ‘barely extend to the end of the day’. The reflection occurs upon the very moment where Rousseau determines a significant precondition for enacting his thought experiments: the Carib is the instrumentalised primary object for situating the idea of man’s relation to nature, or rather of a natural state, which falsely and grossly mischaracterises the Carib, in general, as one who forgets to remember as he ‘sells his cotton bed and returns weeping to buy it back in the evening, having failed to foresee he would need it for the coming night.’⁸⁷ Melville goes on to elaborate this brief, but important assumption (one we will soon again return to) by stating:

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How, then, to respond to this account which in itself gives license precisely to a certain **fearless unaccountability** — an account, that is, which permits the imagination to rouse, mobilize, and discard the colonial other at will? What is the structure of this (dis)figuration — this visitation of an other whose visit is always already placed under erasure for its inadequacy? On the one hand, the Carib is forcibly disavowed for being unsuitable for the name “man”, the modern anthropos. While, on the other hand, he is also deemed insufficient as an other against which “man” might compare “himself” as a species. The Carib is in a peculiar position, to be sure — at once responsible for “man” insofar as he signals (at the very least) a form of otherness with which to compare the species, while inadequate as a figure with which to measure this **distance** accurately. In a manner of speaking, he is neither properly “human” nor wholly other, neither civilized European nor purely “natural”. Acting as a kind of middle-man, he is somewhere in-between — abjected on both accounts — thus leaving the terms “man” and “natural man” pristine, untainted, and otherwise ready to be fictionalized […]
Rousseau’s suggestion that a foreknowledge of death is “one of man’s first acquisitions” upon leaving the natural state. The lingering implication produced (perhaps unconsciously) by the Carib’s close proximity to this announcement is quite clear: without foresight, the Carib is without death. He knows nothing of his own finitude — an ignorance which manifests itself here in an uncanny inability to anticipate where he will be (or even if he will be) at the end of the day. If death is, as it is for Heidegger, Dasein’s own-most possession — the very object of its being — then the Carib’s loss is much more serious than it would at first seem.

More than just a cot, the Carib loses everything — his finitude, his humanity, his very ability to possess anything whatsoever. This is a tremendous loss indeed — one which Rousseau registers in a remarkable moment of destitution and homelessness, a moment in which the Carib has in fact sold his home (his place of rest) without knowing it. His nocturnal sanctuary as far from his mind as the day is long, the Carib (as Rousseau imagines him) is a wanderer — unsettled and out of place — returning groggily to the site of his uprooting.”

Despite the temptation that Melville provokes to dive into the precipice of Rousseau’s ‘property’, I will instead reflect on how Melville’s critique does point to the adaptation of the exotic that Segalen warns about in his Essays on Exoticism. Rousseau, in his fearless unaccountability, intentionally idealises a benign ‘natural man’ as opposite to the European, thus collapsing the perceptual distance between the two with a rationale based on a false, colonial equivalency that is not authentically ‘exotic’ to the Carib. The notions of home and of (lack of) foresight, which instantiate the problematic type of exoticism of memory, are left unexplored under the assumption that the Carib (and the Taino, and the Arawak, and the African slaves, etc. etc. etc.) does not remember the past (as home or place or ‘site of his uprooting’) and thus is unable to project or re-member the future (as foresight), as if s/he would not ‘care’ for their ‘living’ environment. With the exception of a very few accounts by early scientific and geographic explorers, such as De Las Casas, Fernández de Oviedo y Valdés, and von Humboldt (the two former of which were later associated with deploying the bloody enterprise of African enslavement as a way to supplant the burden placed on American indigens), that kind of mischaracterisation was undeniably pervasive since the days of the ‘discovery’ in the early 16<sup>th</sup> century all the way to the mid-20<sup>th</sup> century. And this oppressive sense of domain over and violent subjugation of the colonised other, human and non-human, reached its peak during the 19<sup>th</sup> century’s industrial explosion. Indeed, such influential impressions of ‘carelessness’ on the part of the indigens, based on false equivalencies of ‘anamnestic’ incapacity or insufficiency of memory, did impact what the term ‘ownership’ could signify. But more critically implicit is the inauthentic, false equivalency of memory and the instrumentalisation of the exotic that undergirds the most fundamental anthropological and ‘natural’ dimensions of social, historical, and scientific construction – regardless of whether the intention is to create an oppositional hierarchy of the colonised as inferior (Arrhenius) or superior (Rousseau). It is these particular kinds of reductive, binary, ambiguous, undoubtedly racist projections that continue to be stored within these constructs, spreading on virally through even the most contemporary discourses, suppressing and compressing trauma within ‘remembering’ and ‘forgetting’ of the colonial subject that drives and conceals, at the most fundamental level, a particular kind of insidious violence.
Technical memory.
Colonial memory.

Enter Bernard Stiegler. He is the tertiary axiom of this trans-positioning of the Carib (and of the conspicuous absence of the Taíno and other Amerindian civilisations in their role as the ‘good’ ghosts, and counter-doppelgängers). In his first volume of *Technics and Time: the flaw of Epimetheus* (1998), Stiegler rigorously reminds us of the embeddedness of ‘technics’ in human affairs. I read his technics as a preceding difference between technique (skill) and technology (mechanisms), perhaps as the ‘essential’ condition that defines what is to be human-being. As one of Jacques Derrida’s last students, taking his cue largely from palaeontologist André Leroi-Gourhan and philosopher of science Gilbert Simondon, Stiegler strives to differentiate what technics means by departing from the philosophical ‘origin’ between tekhnē and epistēmē through Plato’s appraised virtue of memory. First, he asserts anamnesis to be the act of acquiring information through your senses to be retained, or ‘internalised’, and then be made retrievable from your brain, biologically. Stiegler then discusses that the virtue of ‘remembering’ is what motivated Plato’s aversion to ‘writing’, by which he meant not only writing words down on an exterior surface – stone, paper, etc. – but also any kind of inscription that served as a prop or aid to help ‘re-member’ a lost memory, since he considered it a weakened rupturing-away from one’s body. To Plato, such ‘externalised’ memory would lead to human decadence, since ‘technicisation’ – the very act of externalising what we know – would paradoxically produce the loss of that Platonic virtue of internal anamnestic memory. Stiegler reminds us that the act itself of externalisation is an artifice of lessened, ‘weakened’ memory, of hypomnēsis. At this intersection between interior and exterior, anamnesis and hypomnēsis, he argues, we find the still-evolving ‘ecology of technics’.

Furthermore, he proposes that the very act of externalising, or more specifically of the industrial exteriorizing of our memory, of grammatisation
– whether through the written word, or through any and all kinds of objects and byproducts of human 'creation' – is the very essence of what constitutes being human. And to me, the question of whether or not this essence is necessarily artificial or un-natural in turn constitutes the body of Stiegler’s own contemporary discussion about memory in the age of the internet and the digital. With that, for the moment, let’s focus on the internal | external divide itself. Following that binary model, let’s keep our thoughts on anamnesis as internal, and the hypomnesic milieu as external resource-materials of memory. The latter, in physical form, as that weakened state of memory – traditionally as a manuscript, or diary, or notebook, or ledger, etc. – is referred to by Plato, later by Foucault and Derrida, and most recently by Stiegler, as hypomnēmata.

At this early stage of Stiegler’s much broader exploration, he lodges technics between the meanings and interrelations of anamnesis as it leads to the biological, and hypomnesis to the inorganic. Between them I interpret that Stiegler articulates a metabolic ‘dynamic’, or self-energising impulse, as a now-inevitable, insatiable, ‘essential’ reflex, a libidinal energy that drives the key modern contradiction of our times: a rupture driven by the industrialised mediation of relations between human and environment, mind and world, biological and mechanical… as per Stiegler –

‘Human life is no longer simply biological: it is a technical economy of desire sustained by hypomnesic technical milieus, symbolic milieus in which drives find themselves submitted to a principle of reality that requires the postponement of their satisfaction. As a result of this symbolic mediation, an economy arises through which the energy of the drives is transformed into libidinal energy, that is, into desire and sublimation. Technical memory [as desire and sublimation] sustains this hallucinatory economy through the epiphylogenetic object, as fetish as well as support of narcissistic reflection’ (my emphases). 89

That differential modern contradiction of libidinal energy as technical

memory is the toxic rupture, or what (Walter) Benjamin referred to as our unconscious ruse, bringing a ‘second technology’ that ‘reveals how human beings first began to distance themselves from nature’ as a constant and widening dis-play. From that unconscious rupture, I contend that the traditional hierarchy of fetish and illusion, from where we are somehow mastering from the ‘inside’, suspended-from and standing-above an ‘outside’, is neither external nor internal. It is instead implicitly sandwiched within the invisible and spectral unconscious of colonial memory that divides man from nature: in the most primitive sense, it is technics.

To elaborate further on the unconscious colonial trait within technical memory let’s, as Stiegler, turn to Heidegger’s lecture essay, The Question Concerning Technology, where Gestell is brought forth. Gestell in German broadly refers to a device of ‘support’. It can be just the framing of a picture but, more specifically, it may also refer to either a ‘pedestal’ that seems secondary but is, in fact, intrinsic to the display of an object or a view, or to a ‘trestle’, which holds-up and suspends a medium for the making, say, of a painting or a sculpture, or for carpentry. Gestell is ostensibly figured forth by Heidegger as the invisible, inevitable, all-encompassing ‘enframing’ of life by way of technology.

‘The essence of technology lies in Enframing [Gestell]. Its holding sway belongs within destining. Since destining at any given time starts man on a way of revealing, man, thus under way, is continually approaching the brink of the possibility of pursuing and pushing forward nothing but what is revealed in ordering, and of deriving all his standards on this basis. Though this the other possibility is blocked, that man might be admitted more and sooner and ever more primally to the essence of that which is unconcealed and to its unconcealment, in order that he might experience as his essence his needed belonging to revealing. […] Yet when destining reigns in the mode of Enframing, it is the supreme danger. This danger attests itself to us in two ways. As soon as what is unconcealed no longer concerns man even as object, but does so, rather, exclusively as standing-reserve [Bestand], and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve.
Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth’ (my emphases).\textsuperscript{90}

It is not that the output of technology – for instance, cars, computers, bridges, rockets, whatever – is the crystallisation of the ‘enframing’, but that the unavoidable fate, of destining in \textit{grammatisation} and its prosthetic output as hypomnēmata [\textsuperscript{c.(D)}], as the essential technological objects of memory, are thereby the energising essence of that \textit{unconscious ruse} and its ‘second’ technology. As humanity unwittingly began destining itself toward modernity’s self-fulfilling prophesy of industrial catastrophe, it is clear that the \textit{messianic} power of science to project – to pioneer – ‘a’ future is con-fused into technology’s impulse to colonise: it conceals a mythical command of economy fusing science and technology.

Both Stiegler and Jacques Derrida refer to this fused condition of technology and of science as ‘techno-science’. In \textit{Spectres of Marx}, Jacques Derrida tells us that the messianic power of technology is indissociably related to the differential deployment of \textit{tekhnē} as techno-science. He tells us that ‘[techno-science] \textit{obliges us more than ever to think the virtualization of space and time, the [messianic] possibility of virtual [future] events whose movement and speed prohibit us more than ever...from opposing presence to its representation, the living to the non-living, in short, the living to the living-dead of its ghosts.}’\textsuperscript{91} Stiegler further explains, albeit more pragmatically, that science ought not to be reduced to technology because science has a fundamental relation to ideas. Scientific ideality does not coincide with the real, but it genuinely exceeds it. It is the real that becomes possible, the \textit{real} potential.

But if we are to accept that the \textit{medium} of science is technical – in the double sense of environment and medium – then \textit{technoscience} also means that science is increasingly dominated by what is now undisputedly capital economy. Ultimately, and precisely because of this operative, messianic commandment being driven by free-market economy, Stiegler – and to a certain extent Derrida – encourages us to resist be-


ing obliged to confuse science and technology. In other words, if there is any potential to resist the colonial drive and the messianic destining and collapse of perceptual distance that occurs from the confusion of science and technology, we must then work to differentiate them. Otherwise, as per Heidegger, by ‘pursuing and pushing forward nothing but what is revealed in ordering’, we continue to drive the concealing of that ‘other possibility’, hindering our ability to differentiate the messianic from the agency of the spectral potential of future-making, with nature. That is, if the confusion of technology and science in technoscience continues undifferentiated, what is toxic in the all-encompassing mode of Gestell is thus forth perpetuated as it blocks the perceptual distance from where technics takes place in relation to nature.

Without heeding this call, the concealment that enframes our ‘technicised’, bare lives, in the flux that is the invisible infrastructure of Gestell, we thereon find that it is no longer possible to rein in our colonial impulses… if we ever could. Our evolving capabilities to re-member the past and to calculate forth a future are decisively driven by this impulse that is implicit to technics. Technoscientific modernity therefore implicitly necessitates technics to drive our illusory and deformed sense of control over nature as capital resource, as ‘standing-reserve’, rather than as ‘relation’. Stiegler states:

‘Technics become modern when metaphysics expresses and completes itself as the project of calculative reason with a view to the mastery and possession of nature, itself no longer understood as physis. And yet the being that we ourselves are is much less placed in a situation of mastery over nature by technics than it is subjected, as an entity belonging to the realm of nature, to the imperatives of technics. So defined, modern technics constitutes the Gestell of nature and of humanity through calculation’ (my emphasis). 92

among others] primarily provide Stiegler for his construing of technical memory as perhaps the fundamental human quality: that, prior to the aforementioned Platonic origin, memory has been contained by two palaeontological categories – that of ‘species’ (contained within, as the genome, say the long-term memory carried within seeds) and that of ‘individual’ (or ‘somatic’ memory, construed from instinct into experience, observed in organisms as old and as basic as snails). Emerging from those two kinds of memory, Stiegler reminds us of the third, ‘technical’ memory that is exclusively (although Jane Goodall would disagree with this) physiologically and genetically possessed by human beings. Indeed, the creation of lithic tools two million years ago are considered the earliest form of externalised knowledge. But Stiegler estimates that technical memory of knowledge itself only began to develop ca. 40,000 BCE, when the Neanderthals started to reach the evolutionary limit of the cortical system – the same brain/nervous system component we ourselves still possess today. That was followed by the beginning of the Neolithic era, ca. 10,000 BCE, when conscious methods of memory storage as ideogrammatic carvings and stone inscriptions emerged. These methods are supplemented by the beginnings of agriculture in 8,000 BCE, which functioned as an organised inscription for projecting and securing life as skilled memory. Ideogrammatic carvings are an example of mnemotechniques (i.e. the externalisation and storage of individual memories), in contrast to agriculture, which can in parallel be articulated as a form of mnemotechnologies (i.e. the externalisation of individual memories set onto technological systems that order memories according to their own logics). This means that, for the first time in the history of life on Earth, internalised anamnestic memory is externalised as hypomnesic memory – transmitted through individually acquired knowledge – as our transmission order organising both inorganic and organic matter in nonbiological ways as technics. That is what Stiegler refers to as this third, ‘technical’ memory, as epiphylogenetic memory where ‘individual epigenetic experience provides phylogenetic support for the intergenerational cultural phylum.’

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Curiously, in that first volume of *Technics and Time*, Stiegler also resorts to Rousseau’s Carib as a significant object from which to build his ensuing work on technical memory. This Carib seems to serve Stiegler not as an example of either *anamnesic* or *hypomnesic* memory, but precisely as an object through which one may observe the problem of the *epiphylogenetic mediation* of these two types of memory. He looks to turn and depose the perfectly flawed Carib that Rousseau creates, and does so as a fiction of ‘originary man,’ organised inorganically, designed to be absent from the ‘enframing’, ‘outside’ and full of *nature*. He cites Rousseau to state that

“all the rules of natural right [reason and sociability] are rules which our reason is afterwards *obliged* to establish on
Stiegler seems not so interested here in Rousseau’s celebrated suspension of social gravity as principal intent to conjure the fictional state of nature. Instead, he seems more interested in observing and confirming the unintentional mediation of Rousseau’s Carib as a moment that conceals and suppresses the rupture and the inequality, not between men, but between man and the ‘other’ as nature. Particularly, the self-anointment of North (West) ethnocentrism as sovereign form, away from and above nature, becomes obliged to transmit its legacy of suppressive violence at the expense, in this case, of any contribution the Carib may provide to the ever-present anthropocentric project of civilisation with nature (even in the face of the messianic self-fulfilling destining of Global Warming). Stiegler displays on the Carib a calculated admission to the traumatic suppression of the Carib, particularly by Rousseau himself. The suppression is driven by the destining and concealing of that unwitting obligation, of that ‘fearless unaccountability’ towards transmitting a thought experiment, speculating for the state of nature. What is conjured instead, by the simultaneous acts of suppression and speculation, is a duplicitous ghost of the Carib. That ghost of the Carib cannot remember, cannot foresee, thus cannot forget. It is a Carib that stands without memory or calculation between the rupture, one fetishized to display the auratic glow, as a surface unit [see c.(B)], implicit to the libidinal economy that conceals the colonial drive of technoscience.

The auratic glow of the Carib has two prevalent, dematerialised semblances. One is of an effaced set of exotic fragments of the Carib, with all the Amerindian societies it represents. The other is an irretrievable Carib. It is a fictional character that is developed with ethnocentric precision to entertain and facilitate the ‘observation’ of a speculative state of nature. It serves its master as placeholder, as a suppressed support structure, an inauthentic index, that contradictorily points-to and dis-plays the fatal flaws of that ‘state’ of nature. Both the effaced and irretrievable Caribs, compressed unto one-another as a more dense, androgynous.

94 ibid. Stiegler 1998, 110 (Rousseau’s ‘Discourse on the Origin of Inequality’).
semblance, is/are what gives strength to the auratic surface unit. They are a glimpse that illusorily diffuses how replete the foundations that sustain bare life are; all fully driven subversively by the colonial intent in technics... as a concealed, superrepressed manifest-memory suspended in thin(ing) air by the Gestell.

Remember... Humboldt’s effaced account of the Carib suggested a civilisation with two millennia of survival prior to the ‘discovery’. He individually describes multiple Amerindian societies, each with distinct capabilities for languages and skills for projecting sophisticated notions of the future, with living practices for genuine future-making that still to this day (in parts of Venezuela, Brazil, and Colombia) side-step, and even resist, modern life. Instead, what has prevailed is the semblance of what Rousseau romanticised as a fictional Carib, as a hyperbolic quasi-man, so present and so exotic in its savagery, that it is forever poised to ‘suggest’ a supernatural, mythical-real figure paradoxically endowed with the ‘inspirational’ inability to neither remember nor to forget. With that latter, dubious construct in mind, I interpret that both Stiegler and Melville attempt to rescue Rousseau (and the Carib to a certain extent) from that binary semblance by indeed pointing to the Carib as a duplicitous instrument of memory standing barely visible, like a ghost, between the rupture. In doing so, they suggest the anthropological Carib to be a still-significant support structure, a placeholder, for un-mediating the ‘suggested’, but not ‘revealed’ Carib. From both of their ghostly dualities, as effaced and irretrievable, and as suggested but not revealed, the Carib becomes a critical sample of that tertiary memory, of that epiphylogenetic object, that ambiguously generates Rousseau’s critical denouncement of ethnocentric privilege:

‘Originary man is neither a reasonable or speaking animal, nor a political or social one. The originary purity of this essence, impossible to express otherwise than through fiction, absolutely contradicts tradition. Yet another reason for denouncing the mediations of philosophy and its ‘studious detours’ for understanding what natural law is: that philosophical tradition of “political and rational, sociable and speaking man” is that of false evidence: the savages discovered in the age of Enlightenment are neither rational nor sociable. The Caribs of Venezuela are this mythico-real figure — an obviously problematic
reference since Rousseau does not intend to found his discourse on factual reality. But the Carib is not a simple fact, and Rousseau does not appeal to him as proof: he finds in him a source of inspiration, with his anamnestic [of his ability for recalling embodied memory] and mieutic [of eliciting new ideas from the ‘other’] virtues; an already corrupted figure of the origin, he suggested the origin nevertheless, without ever revealing it. One understands the fascination with this type of approach by Lévi-Strauss, as for the first time, from within the Western world itself, is that ‘ethnocentrism’ is denounced.”

Eventually, Stiegler is compelled to come around and indicate that this approach, which was embraced by Lévi-Strauss, is highly problematic, for it only reaffirms the roots of ethnocentric mediation. This happens primarily because the ‘denouncement’ is founded on further ‘repressing’ efforts to exceed the defective anthropological binds of ‘natural law’. Thus, instead of emancipating the subjected other, the mere ‘denouncement’ only continues to perpetuate its own logic, as symptomatic to the techno-scientific destining. And that, I register, is Stiegler’s intent in pointing to the ‘denouncement’: an attempt to un-mediate the Carib from his instrumentalisation as empty place-holder, as ‘neither rational or sociable’, or as what Melville refers to as an in-between, abjected ‘middle-man’. They both suspend the Carib precisely as an attempt to productively straddle Rousseau’s own divisional faultline. On the one hand, Stiegler and Melville acknowledge the problem of how Rousseau romanticises and instrumentalises the ‘superior savagery’ of the Carib. That is because the instrumentalisation reveals that the man-before-the-social is corrupted, deformed and exoticized by the very thought of the ‘discovery’, and that colonising the Carib, especially at the level of discourse, is to instrumentalise her/him into a forgetful ‘standing-reserve’ of labour ready to be disposed-off by the ethnocentric ‘state of nature’. On the other hand, they point to how the Carib is a suppressed and concealed ‘exotic’ potency of an actual ‘natural’ man, in organic relation with nature, living a world of genuine interrelations, with a differentiated, nonchronological conception of memory as past or future – an authentic model devoid of the modern man’s calculative, technical, colonial instinct.

What results from this oppositional straddling is the ‘suggestion’ that the ambiguous dialectic of the Carib as outstanding placeholder of anthropology is pointing to a potential emancipation from anthropocentrism through an organological kind of post-humanism: a worthy consideration to explore. But to do so, we first ought to understand that just making a ‘denouncement’ of ethnocentrism – which I carefully associate to being, already, a problematic subset of anthropocentric intent – is indeed decisively insufficient to fully enact a ’detachment’ from anthropocentrism. It is utterly insufficient to try and offer discursive restitution, or retribution, to the violence exerted upon the Carib (in the past through the ‘discovery’, and at present through Global Warming) simply because the scale of the atrocities is impossible to match. Instrumentalising it/her/him/they, again, as the ghostly signifier of all the other superrepressed societies is just adding insult to injury. And that is quite literally what happened, and continues to happen to the Carib, unless otherwise technically decolonised from colonial memory.
(Fig. 44) Advertisement for human ‘exhibition’ in 1852 at Crystal Palace of ‘The Famous Amazons’ who were captured in Dahomey, the African nation invaded and colonised by the French, region now known as Benin. Source: British Library Board, Evan 1060.
The Unmediated Carib begins to display the greenhouse as collapsing distance (and messianic destining) of colonial memory

In principle, I deem that the trauma generated by the collapse of perceptual distance is caused by disproportionate contrast and mediation of relations between humans and the environment. The collapse also implicitly tends to be the principal violence that facilitates the concealment of the ordering logic of ethnocentricity. That ordering logic of concealment becomes also the operative logic that capacitates colonial memory to withhold and superrepress the trauma. In other words, as per Heidegger, the collapse of physical distance between ourselves and that which we perceive, is congruent to the unconscious ruse of technology that Benjamin proclaims, ironically driving apart the distance of ourselves from living with nature. The force of the collapse, driven by the imperial-colonial trope of libidinal energy, is what technologically facilitates the transgression of one perceptual region onto another. If the transgression is disproportionate, it directly provokes the danger of destroying any potential for sensorial positioning, and for the proportional differentiation that is critical for producing the spaces that allow distinct and diverse perspectives to occur.

The effect of such transgression is the fundamental trauma that, while invisible as it is absorbed by our unconscious, does thicken over time, leading us towards crisis. The accumulation of the trauma accumulates. It is supressed within and away largely in that colonial capacity of technical memory, vis-a-vis of technics, destined explicitly beyond our control, regulation, and mediation to resist our drives. It is industrialisation’s most pervasive, if insidious force and effect, leaving behind and between its exhaust a thinning relation to natural reality in the form of that ruse… the one elusively separating interior and exterior as binary supports and concealments to colonial memory as technological by-product. The industrially thickened support structure of concealment,
that is both the aural surface unit and spectral semblance, is what begins to most profoundly inform the West's experience of space and time during the 19th century. Indeed, it is hard for me not to reaffirm that burgeoning modern space is perhaps most uniquely characterised by that notion of Heidegger's collapse of distance: by a perceptual enframing of distancelessness to Other worlds. The crisis that this suppressed type of perception is, for me, no better represented than by the violent, imperial transplantation, and exhibition of the entire colonised subject of the empire, whether in non-human, and/or human form.

(Fig.45) Etched engraving atop Chapter 36 ‘Comfortable Pomeranian houses’ (related to Chapter 35 titled ‘About glass-houses / and their great uses’) used for collecting live exotic plants and animals, and even human subjects from the colonies, as described in Germanic farm manuals commonly titled Haus Vater, 1719. Source: Stiftung Bibliotek Oechslin.

Perhaps the most egregious manifestation of that distancelessness stems from the centuries-long practice of concocting ‘human zoos’ and ‘human menageries’, one dating since the 16th century in Italy and England lasting well into the 20th century. These were ethno-genic (or anthropogenic) exhibitions of colonised subjects. And,
they began to draw significant public attention in the 1840s in Great Britain, continuing to do so until the 1930s in Germany and the United States. In her essay *Glimpses of British Guiana at the Colonial and Indian Exhibition* (2016), Sara Albuquerque tells us that Britain’s Great Exhibitions became dominated by the imperial theme by way of...

‘…education, trade and entertainment on a huge scale. The way the “Other” was exhibited, not only showed the curiosity for the “Other”, the different and exotic, but also reinforced the idea of inferiority and the primitive, by reflecting the “attitudes and policies of the colonising powers”. On the other hand, the “living exhibits” also had the function of amusing, informing and educating, although the boundaries were not very clear, and the interests were various. The “entertainment value of the ‘savage’ was increased” by activities such as dance, music and games which were considered primitive. It is important to stress that there was not only a spatial distance but also a temporal distance between the “living exhibits” and the exhibition visitors. As Johannes Fabian notes, Anthropology, an emerging discipline at the time, was inclined to assume a “petrified relation” between the observer and other societies. Therefore, Indigenous societies and their histories were understood as fixed and unchanging. How the “natives” performed their artisanal tasks seemed to be part of a distant past, giving an idea of their apparently undeveloped status.’

Albuquerque further indicates that the display of the Carib was a present colonial specimen ingrained in the anthropological machine of the British imperial project – that, indeed, the Carib Amerindians that appeared in the *Colonial and Indian Exhibition of 1886* were specifically seen as both cultural and scientific ‘resources’. On one hand, the Caribs had been ‘lent by the Crystal Palace’ of the Great Exhibition

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of 1851, and were as well generically described as colonial subject prototypes by the Illustrated London News in 1886 as ‘the chocolate-coloured native, wearing a fish-bone necklace […] a typical aboriginal.’ Moreover, poignantly:

‘raw materials from the British Guiana [one state-region indigenous to the surviving ‘Carib’ Kali’na] were of interest to Britain and the involvement of Royal Botanic Gardens at Kew in this matter. Nevertheless, the exhibition not only displayed objects and commodities, such as the case of sugar, but also displayed the people. Here, particular attention is paid to the Amerindians who were portrayed as living ethnological exhibits at the exhibition.’ (my emphases) 99

(Fig.46) Illustration of Ethnological Stand ‘on loan’ from Crystal Palace to British Guiana Court human exhibition of 1886. Source: Albuquerque. Public Domain.

In this case, the blurring of the 'savage' Carib, as exhibit and exhibitor, as middle-man and as contextualization, is trans-planted as organic, inorganic, and industrial object of the ‘discovery’ just as mineral, mechanical, horticultural, agricultural, and artistic commodities. The Carib is a strong signifier of the unquantifiable core quality of the technoscientific destining that homogenised the myriad of all other kidnapped and enslaved civilisations given way by Spain’s Golden Age and characteristic of the Victorian Era. Such apathetic (if sociopathic) byproduct of the colonial-imperial project was, and surely still is, a lingering and concerning character of assumed superiority and domination over the so-called 'shithole'\(^\text{100}\), third, developing, exotic, savage, natural worlds...

...but that Crystal Palace and Kew Gardens were the key civic infrastructures of cultural and scientific display and development for that 'new' world order, as mythical and messianic expressions of modernity – from which the Carib and all the ‘Other’ civilisations are homogenised and subjectified into that distanceless other – is what drives forth the core turning point of our stroll.

It is not just that the Carib as ‘middle-man’ and place-holder for the ‘Other’ makes-visible the forces that (con)fuse colonial drive unto technical memory... but it is also that the Carib – the one, and many, that continues to grow with me – requires the questioning of that technological support structure that was fast implemented, not just to facilitate, but to sustain and promote the collapse of distance... the distancelessness, the apathy, the transgression, the trauma.

The support structure, the prop to our turning point is here, transparently.

It is the retrospective turn from the greenhouse as building to ‘greenhouse’ as complex.

‘Rather than isolating each specimen, at Crystal Palace animals, plants, and even people were grouped — in what might be called a tableaux vivant — in a manner “both instructive and amusing” to “afford a clearer conception that can be obtained else-where of the manner in which the varieties of man, animals, and plants are distributed over the globe.”’

It is as if Heidegger’s exact description of the *Enframing* (and of the ‘world as picture’ [*Darstellung*] for that matter) did, quite literally, crystallise into physical form, not least as the transparent, translucent, inevitably ghostly semblance of modernity itself. And it is now, in a world destined towards Global Warming, that such haunting appears as an inescapable force, a backlash that in turn leads us to confront the dominant attitude of that messianic promise of
modernity as nothing but an elaborate, transparent, yet reflective self-projection of inadequacy. It is that disproportionate complex of inadequacy that is lurking amongst us… and it is that which the Carib with me cannot help but to call-out loudly, yet again, how Svante Arrhenius looked to condition the metaphorical misnomer and ultimate tableaux vivant of the ‘greenhouse effect’ by – just a decade later – literally opening his universal manifesto The Life of the Universe with the following ethnocentric assertion:

‘The human races on the lowest grade of evolution live merely for the day. The tomorrow and the yesterday have no interest for them, except in so far as their special daily cares are directly touched.’

I cannot help but feel obliged to embody and exclaim that the ‘greenhouse’ is the industrial scribe and harbinger of the techno-scientification of our lives. In its indexical state of doppelgänger to interiority | exteriority, and of the past and future to natural history, we find, still, the drive of the imperial colonial project. ‘Greenhouse’ is the chief mnemotechnological, colonial, archival, structure that stores away and conceals the ill-advised attitude of violent dominance over nature as the other. That heavily lathed sandwich within the greenhouse’s thin, glassy, civic, technological benevolence is not just an embodied, and even situated metaphor of the toxic division conjured by the ruse of interiority | exteriority. It is the surface itself, in its seemingly thin translucence, that is the auratic dematerialisation of the violent rupture that conceals-away, as a strange mnemotechnical palimpsest to the traumatic violence of colonial memory.

Here with me, as the growing and unmediated Carib now walks along, I feel obliged to ‘fore-see’ what was to be detrimentally ‘fore-gotten’ within its glassy, auratic surface. And in doing so, I want to challenge the ‘fearless unaccountability’ of Global North | West power through ‘greenhouse’… to unfold and decompress its violent superrepression of memory – cultural, scientific, institutional, or otherwise. I want to do it, yesterday through the ‘discovery’ and the ‘age of exploration’ that nearly

102 ibid. Arrhenius 1909, 1.
erased the proportions and interrelations of the Southern bioregions, and of the respective legacies of the self-sustained First Societies; and tomorrow by conjuring the greenhouse misnomer as a selective tool for messianism, as the neo-liberal growth model, and index to the suicidal logic of Global Warming [see c.(C)1].

‘Against the amnesia and misrecognition that characterises so much of European cultural and political representation […] the often unrecognised and generally inadequately interrogated historical presence, material traces, and psychic scars of colonialism, passed through generations, also creep up in current forms of economic and political inequalities found between the Global North and South, Europe and Africa – inequalities that colonial relations of course played an important role in defining.’

I [the unmediated Carib] display the anarchival impulse of greenhouse technology

Let me just first say that if my tone, and coherence, seems to begin to lack composure is because I am slowly letting that anguish, that super-repression loose. So let me look back and look forward on and about our stroll through a careful embrace of the suppressed Carib mind and body that has always been with me. I keep walking with you. We walk together within, along, and through the thickness of the surface of ‘greenhouse’ as master archival device for containing, ordering, and suppressing the ethno- and anthropocentric colonisation of nature.

From its millennial origins as housing for the Roman Imperial medicinal

garden, to the instrument of transplantation of the biological exotic;

...from being the display system to the global-imperial project, to the ubiquitous shell for the standardised botanical garden;

...from the gas & effect that makes the Earth liveable, to the gas & effect that may kill us;

...from the ultimate financial superstructure for agricultural speculation, to the ultimate messianic parastructure for preserving the digital and biological remnants of what may be left of human memory.

The encounters with these moments have occurred, for the most part, unintentionally. I have not wanted, much less desired, to run into these realisations. They are the yield that delivers the most pain; the pain of remembering. But they are what helps me move on, here, now, to potentialize alternatives of what may lay ahead. From the *Montage*... methods of research and experimentation were processed by way of the installations, investigations, and reflexions, *through* 'greenhouse'. Through the implementation of my works of environmental form, I have partially been able to begin to share with you, not the works in themselves, but how such a practise-based approach can aid in arriving at unforeseen effects, affects, and perceptions, particularly in regards to how they afforded me the chance and motivation to revise, and rethink the social and historical construction of the technology of ‘greenhouse’...

...to perceive that the total manifold of ‘greenhouse’ — as proto-technique, false metaphor, and messianic technology — is its own most obvious and direct physical manifestation: that ‘greenhouse’ is the master support structure of our destining towards global warming; that ‘greenhouse’ is the ultimate reification of the epistemic catastrophe that is Global Warming.
From that rethinking, nothing becomes more evident to me than to, again, sense so intensely that Global Warming bizarrely becomes the ultimate standing-reserve for market ‘growth’. Even our self-generative systems for sustenance, our ‘ecosystem services’ – breathable air, drinkable water, pollination, even diversity itself – are being destabilised and dissociated from being a natural right to all forms of life. These become transubstantiated, like wine into blood... taking ‘ecosystem services’ and turning them into the ultimate, if terminally commodified instrument of market speculation. It is difficult not to see such misappropriation as the key, dubious, illusory, terminal violence... the precipitous – albeit slowmotion – fall Heidegger foretold. Therefore, we seem required to unfold and depose ‘greenhouse’ for what it is: the physical form of the disproportionate scalelessness of market speculation. It is not just the physical manifestation of the technological concealment of neocolonial advance, but it is the containment device for the toxic, contradictory ordering logic of all future living memory. Here we must then stand and more closely observe the archive and its own default of superrepressed memory, the manifold ‘contained’ as void within the spectral quality of its own anarchive [see EXEGESIS & c.(D)_2] ...
'If repetition is thus inscribed at the heart of the future to come, one must also import here, in the same stroke, the death drive, the violence of forgetting, superrepression (suppression and repression), the anarchive, in short, the possibility of putting to death the very thing, what ever its name, which carries the law in its tradition: the archon of the archive, the table, what carries the table and who carries the table, the subjectile, the substrate, and the subject of the law.'

You and I do so to contextualise the anarchive with the matter of violence and of natural law. To initiate that precedence and context, I would like to associate anarchive to two quotes. First, let’s cite Felicity Scott from her essay AcidVisions, who indirectly addresses an essential aspect of technology as it relates to the qualities of religion and of justice. In it she makes a robust critique of the intentionality nestled in the physical and political functions of ‘geodesic domes’ (often assumed to be a type of idealised greenhouse or biosphere). She describes that geodesics – again, as researched, developed, and promoted by Buckminster Fuller – became a signifier of Fuller’s own questionable, if duplicitous narrative, wittingly or unwittingly playing to the desires of civilisation’s ‘infantile’ faith in technology and justice.

‘In the opening pages of Civilization and its Discontents, Freud noted the troubling nature of his friend Romain Rolland’s identification of religion with ‘a feeling of something limitless, unbounded — as it were, oceanic’. Freud sought a psychoanalytic explanation of what he regarded as a crisis in the demarcation of the ego and the external world. He conceded that beyond the nonpathological situation of two people in love, perhaps such primordial oceanic feeling might coexist in some individuals as a counterpart to a mature ego-feeling. But rather than accepting it as religious, he recast it as a symptom of regression to infantile helplessness, a defence against suffering, that in addition to the mass delusion of religion, might manifest in other pleasures such as art or even erot-
icism. If civilization was supposed to protect man from the destructive forces of nature through advances in science and technology [in this case in reference to geodesic domes and their political milieu], just as it would protect one man from the ‘brute force’ of another through notions of justice and of rights, even in the late 1920’s it was evident to Freud that something had gone awry’ [my emphases].

(Fig.50) Pavilion of the U.S.A. for the World’s Expo of 1967 (formerly the Great Exhibition), designed by R. Buckminster Fuller and Shoji Sadao, erupting in flames. Montreal, 20 mai 1976, Source: Archive de Montréal, U4515, 1.

The second quote is from Hal Foster, bringing us closer to the archival function [see c.(D).]. In his analysis of artists Tacita Dean and Thomas Hirschhorn, among others, who critically worked with ‘archive’ as form, method, and subject-matter, Foster states what the role of an anarchival art and how it withholds its own an ‘anarchival impulse’.

‘Although the contents of this [archival] art are hardly indiscriminant, they remain indeterminant like the contents of any archive, and often they are presented in this fashion - as so many promissory notes for further elaboration or enigmatic prompts for future scenarios. In this regard archival art is as much preproduction as
it is postproduction: concerned less with absolute origins than with obscure traces (perhaps “anarchival impulse” is the more appropriate phrase), these artists are often drawn to unfulfilled beginnings or incomplete projects in art and in history alike that might offer points of departure again.’ (my emphases) 106

The remote ecology that I want to relate between Derrida’s ‘superrepression’, Scott’s ‘crisis of demarcation’, and Foster’s potential ‘points of departure’ is aimed at articulating a triad of resonance that may put perceptual distance unto a differential perspective; or rather unto a position of alternative relations and intersections for augmenting the role of epistemic traction in artistic practice. Through the resonance of anarchive (not as form, nor as ‘purpose’, say, like the dynamic of ‘anarchiving’107 which seems to further reify anthropocentric design, and does not seem to address reparation nor remediation of relations with the environment) we may find the force to unmediate and dis-play that which our technical impulses tend to insidiously conceal. The very awareness of each component – of the superrepressed memory of colonial violence; of our infantile crisis of demarcation from an equally infantile idea of a world of unlimited resources; and of a potential for obscured (colonial) traces to be unearthed, again, and again – brings to us unto the anarchive in a manner in which it may deflect us from the technological, positivistic ordering logic of the messianic promise that is destining us towards a strange and contradictory cataclysmic salvation.

It is that invisible yet palpable criticality in the resonant paradox of the anarchive that seems indirectly true to ‘greenhouse’. As a prepotent resistance and negation, the anarchival impulse may softly derail or bifurcate us towards other genuine recourses concealed by the weird and fateful destining that ‘greenhouse’ procures. We do gain, with sense and courage, by demarcating and decompressing the hidden spectres between the unconscious superrepression of colonial memory and the potential points of departure their resonance may animate. But to do so – instead of comfortably procrastinating in the sweaty, stinky,
lukewarm armchairs of false hope provided by the futile post-colonial
tropes of inaction, and the neo-colonial prophesies drawn from religion
and technoscience, us as indolent subjects lured by the old messianic
aura towards the inevitability of Global Warming – we ought instead
to become undone as anarchic purveyors delivering another type of
power… a ‘non-violent violence’ of cultural cannibalism that we may
find with our own spectral agency now unmediated from us as Caribs…
one that has been violently inscribed indecipherable upon ‘greenhouse’
as a container for our future selves within the already loaded surface,
palimpsest, carbon paper that we are.

(Fig. 51) Magnified section of America and its anthropofagic feast, by Stephan Kessler, Oil on
canvas, 153 × 250 cm, ca. 1650-90. Source photo: Berrios-Negrón.

In the case of I as Carib, of me and you as ghostly, ‘abjected place-hold-
ers’ between the cannibal savage and the civilised man, we become
unified yet un-mediated again by walking along the edge of the juxta-
posed and interpenetrated ‘hurricanes’ of colonial homicide – past in
the ‘discovery’, and future in Global Warming. Our walk dis-plays how
they, the comfy colonisers, violently ignore and obfuscate the colonial
past only to support and augment the future of neo-colonial destiny.
Their confluence explodes, slowly, right now, presently, in Puerto Rico,
in the Caribbean, in Greenland, in Antarctica, in Bangladesh, in Peru,
in Australia, in India, in California, and beyond. This ‘slow-motion nuclear
explosion’ is the Frankenstein, the revived cataclysm of North/West values nestled in the ‘objectivity’ of that fearless unaccountability that drives accelerated climate change, mercilessly ravaging, suicidally, the entire integrity of all life by following a supposed ‘natural law’ lathed in the name of consumerist ‘freedom’… Global Warming is the double-bind of geochemistry.

We thus are compelled to depose and dis-play the ‘violent violence’ of selective amnesia implicit to the archival logic of the modern, anthropological, technoscientific fundament that still feeds natural history. In this case, we, the un-mediated Carib can be an operative instantiation of that anarchival impulse. As such, me and you the Carib, offer our traumatised selves (not as Indians, but) as indices of that violent but potential anarchival superrepression of colonial drive in the insidious nature of technical memory. As Caribbean colonial subjects, we experience today not ‘abstract’ projections or speculations, but present, real-time, physical, emotional, and economic effects of the steadfast, marching, cataclysmic stride of neo-colonialism and its contradictory growth-model-as-standing-reserve: Global Warming. Those marching orders, guaranteeing the destining of unresolved and continuing colonial violence, are implicit to the suppression of the libidinal drive contained and deviated by technical memory. It seems that to decompress the superrepression [see c.(B)], I must think of violent violence, and of non-violent violence thereafter.

Again, for Puerto Rico, and throughout many parts of the Caribbean and Latin America, the brittle, precarious labour of sustaining the unsustainable model of advanced consumerism as a habitable, living, civil environment ‘inside’ the logic of speculative industrialisation has demonstrated to be a disproportionate form of environmental decay. The effects have become abundant and palpable in the last two decades. Could this be a description of your world as well? Haven’t these past two or three decades been shaped by the force of violent neo-colonial encroachment, of a weird counter-intuitive counter-intelligence that politically and environmentally enforces a creepy misery of pollution and of debt? Hasn’t that state of irremediable decay in the classic state of nature finally shattered the glossy surface-unit of aura that shielded us from looking to that place we dared not look to? Are we now out of our depth? It is a shattering aura of that binary bare life that is either
an informed and almost-hopeless society hanging-on, struggling to remain civil to create a coherent future for their children, or of an uninformed fraternity of blissful greed, looking to extract every ounce of commodifiable matter from the planet right now, today. Who is the 'savage' in that scenario? The latter is entrenched with every intention of protecting and enshrining its deepest sense of insecurity and inadequacy with ‘nationalism’, while erecting and projecting pipe-dreams into the elite club of billionaires who will, one day, delight themselves in their superamazing spacesuits, for their long romantic walks across the endless dusty deserts of Mars, after having grown bored of their greenhouse gated communities… or of having to air-out those sores on their backs, asses, and orifices as their catheters puss away from sitting for days-on-end on their brand new, state of the art Facebook Virtual Reality armchairs.

The contrast is embodied by the harmonised resonance of our distant calls-to-arms. The systemic failures in Puerto Rico and how these are manifesting today, right now, on your watch, in a variety of undesirable, miserable ways, is one of those distant calls. The events being augmented by Global Warming are delivering wholly disproportionate effects the so-called global market cannot possibly uphold… governmental and financial insufficiency; increased joblessness and homelessness; the destabilization of the insurance industry, health services, and safety nets; the decimation of agricultural infrastructure; and, more fundamentally, the increasing inability of our ecosystems to recuperate within any time-scale that may relate to the actual range of adaptation of human and non-human generations. These are indeed the scale-less structural failures already preventing our sustenance, and that of our children, all whom are, right now, riding on those ‘cascading tipping points.’

‘To be hunted by a ghost is to remember a memory of something you have never lived through.’

Our strife in Puerto Rico challenges me to put forth this self-reflection, of us, as the un-mediated Carib, not as a messianic prophesy, but as a haunting protention.\textsuperscript{109} What I mean is that, as I hold us together, and loosen our memory retentions — of the instant before memory within the Carib, of the mythical ‘hurricanes’ of the ‘discovery’ that are juxtaposed unto the real hurricanes now destining Global Warming — we begin to sense their yields...small, speculative moments of future memory that jump-forth right in front of us, as protentions. I mean that the Carib, in you and me, comes together as the tertiary, transculturated ghost of technical memory, decompressed from the sandwiched and repressed doppelgänger, as scientific instrument and display to the ‘state of nature’. We become a shining, auratic semblance exuding the pressure between memorisation and calculation, between the past and the future, collapsing nothing but the toxic object between the fallacy of interior and exterior. We come to talk together, not unlike the painting by late Mannerist artist Stefan Kessler, titled America (Figs. 29, 51, 52, 59, 63), as a queer, trans-ethnic, anthropomorphic, animated, hybrid tableaux vivant of the cannibal-human-animal in dialogue, anachronistically, in present time. Such hybridised tableaux vivant feeds on the repetitive past of colonial drive that clashes right against the destining of brutal oppression, domination, and of extinction that the neo-colonial march towards Global Warming is destining.

Kessler’s painting, which I came across at São Paulo’s Pinacoteca nearly two decades ago, remains in me as an endlessly strange glimpse into a timeless place that is neither fictional or imagined, but that portrays a precise retrospective projection towards a possible life away from Global Warming. It is another kind of ‘protention’, where you and I as Carib, sandwiched by the hurricanes, and weirdly imagined by what Kessler never witnessed (never having set foot on the Americas), become transculturated and interpenetrated, catapulted from a deep past and a distant future, onto a precipitous present. It is a glimpse into how we may unmediate ourselves from the elusive atrocities of colonial violence that decimate the otherwise complex constellations of societies that evolved over millennia along the long array of coastlines, regions,

\textsuperscript{109} see Stiegler, Bernard. \textit{The Neganthropocene} (Translated by Daniel Ross, Open Humanities Press, 2018) 17.
and hemispheres that define the Caribbean region. We look for agency to process and overcome the homicidal disdain and indifference towards our indigenous populations on the Americas. We do so knowing we will never know the exact extent of the trauma in metrics, because no one then really cared to track the extent of the extraction of Amerindian life by way of the ‘discovery’; all but for about five hundred years.

(Fig. 52) Magnified section of America and the exotic baroque couple, by Stephan Kessler.

What we can adduce [or abduct, (para)metrically] of the vague remnants that are left is, again, that this long-event was arguably the largest genocide in human history, with estimates ranging between Thirty Million and One-Hundred Million Amerindians eradicated within about 130 years of Columbus’ arrival in 1492.¹¹⁰

The onslaught of murderous indifference took the form, yes, of European-born disease and forced labour. But the accounts also point directly to plain sadistic torture and mass murder, often executed for the ‘noble cause’ of entertainment.

The initial almost-erasure of the Taínos, and the ensuing enslavement of the more resilient Carib civilisations went on to expand like a virus well beyond the Caribbean. The indifferent eradication of indigenous cultures spread onward, hitting Central America, South America, and across North America, destroying countless known and unacknowledged societies in-between, becoming a genocide of dimensions that are still to be fully assessed, perhaps only matched in horrifying efficiency by the Catholic Crusades or the Nazi Holocaust. In fact, its statistics had been mostly not-so-shockingly ignored up until 1992, during (what was for me a very weird) 500-year anniversary of the ‘discovery’.

That genocide was a commercial practice of trans-bio-regional exploitation, profiteering, and murder initiated by the ‘Christian’ Spanish conquest. It spread soon, fast, and seamlessly in the mid-late 1500s as a viral trend of ‘commerce’ aggressively adopted and expanded by Portugal, England, France, Holland, Belgium, Germany, Denmark, and
Sweden, among several other states,\textsuperscript{111} as an enterprise of unimaginable misery throughout the Americas and Africa, haunting Asia and Oceania thereafter.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image}
\caption{The weird memory of watching the (re)arrival of La Pinta, la Niña y La Santa María caravels into the bay of San Juan to mark the 500 Years of the 'discovery', 1992. Source: Instituto de Cultura Puertorriqueña.}
\end{figure}

Indeed, once the Amerindians were all but erased, the addiction to slavery turned ultimately into the industrialisation of the terrorising of African peoples. The epic tragedy of African-American slave trade, (a fate ironically co-ordinated by the same Bartolomé de las Casas who advocated for the King and Queen to divert the horrific violence, from the American indigene, to the African\textsuperscript{112}) was perfected by a young, European, and unbelievably homicidal United States of America, who, after annihilating and displacing most of the Native North Americans, then moved on to

\begin{flushleft}
\end{flushleft}
perfect the kidnapping and displacement of so many African peoples, tribes, nations, and regions mainly from along the sub-Saharan western coast, turning slavery and its trade into not just an industrial pipeline, but into a Dixie ‘culture’ that tortured and murdered well-over Twelve Million Five Hundred Twenty One Thousand Three Hundred Thirty Seven (12,521,337) souls from 1501 until 1875.\textsuperscript{113}

I will echo again that the drive of that genocidal ‘commerce’ is still the underlying impulse of modern natural science and its history, which is still blissfully signified as the ‘Age of Exploration’. It was actually a calculated transfer of capital – from the economy of slave labour and murder to the far-reaching enrichment of the European project – all rooted in the broadening, delusional rupture that is the fictitious and unsustainable ‘natural right’ to dominate nature…including the ‘exotic savages’, administering it \textit{all}, ‘freely’, as a so-called standing-reserve. One does not have to go far to sense the undeniable assumption and association between the \textit{extraction} of minerals and agriculture, as drivers of science and technology, and their correlation to the murderous annihilation of those entire civilisations in the name of a novel, imperial, global industry, defining capital market growth. It is still today a fresh notion that is diametrically and contradictorily opposed to any form of human or non-human subsistence.

Thus, let me once more haunt Heidegger’s warning:

\begin{quote}
\textit{‘…when destining reigns in the mode of Enframing, it is the supreme danger. This danger attests itself to us in two ways. As soon as what is unconcealed no longer concerns man even as object, but does so, rather, exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve. Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth’} (my emphases).\textsuperscript{114}
\end{quote}

\begin{itemize}
\item \textsuperscript{114} ibid. Heidegger 1955/2013, 26–27.
\end{itemize}
(Fig. 55) Mirror Piece I, by Joan Jonas, Chromogenic print, 101.6 x 56.5 cm, 1969. Source: Joan Jonas.
We [the unmediated Caribs are] the palimpsests to the mnemonic surface of greenhouse

‘Greenhouse’ plays the uncontested role of chief mnemotechnology to natural history; for it is – in geological terms – the collapse of human spacetime made-physical and metaphorical. We blindly believe that ‘greenhouse’ is both what sustains colonially extinct biological subject-matter as an ‘interior’ past, while it sustains the speculative planetary agricultural sustenance as a genetically mastered ‘exterior’ future. It is the present, indispensable, organising technology of human memory, driving us to believe that we are fleeced by the ripe and bountiful modern industrial project. But we as Carib unleash ourselves from within that binary impasse, that double-bind of interiority and exteriority ‘greenhouse’ represents. Our common desire is to reticulate away from the spiral of messianic promise and mythical violence that colonial memory perpetuates. Our reticulated emancipation, or rather, the associative detachment from the trauma of colonial violence is that which presents optional paths away from the pervasive, overarching, and insidious logic of ‘greenhouse’. It is the only form of relating to the ultimate object of the colonial-industrial form of capitalism that the destining logic of Global Warming divides to contain, as an oppositional and dissociative form.

‘Mediation can be conceived as an expedient structure. That is, a distributive relation that becomes significant in itself. When passed through such an expedient structure, an object emits signification in ways that typically disconnected from considerations of how the object’s being circulated affects its enunciation….In other words, the materiality of the mediation replaces the materiality of the object which is mediated. In a chemical process the catalyst is always disjunct from the final product. This is not the case with mediation.’ 115

The resistance and deflection from the path of colonial-industrial, *technoscientific* mediation must lean on the potential we choose to re-member and remediate back to health as the actual, non-binary, multidimensional sense of living. And we know that in order to re-member we must also engage in a degree of ‘forgetting’, as remedy for processing our trauma. As discussed in [c.(B)3], it occurs unconsciously as we individually and collectively have been forced into a state of amnesia, referred to as *functional*, *psychogenic*, or *dissociative* amnesia caused implicitly by our own colonial impulse. *Forgetting* – adding a large degree of complexity and contradiction to an already unstable situation – is in large part, ironically, what allows for our healing to take place. But the complexity lies, primarily, in that we must remain vigilant against that aforementioned kind of amnesia, that comfort zone of *selective* amnesia, that is thus most unproductive as form of denial and escapism.

(Fig.56) photogram from film Reflecting Memory by Kader Attia, 2015. Source: Kader Attia.

Can the Derridean *anarchive* suggest a potential for that form of forgetfulness and remediation for our trauma, from both selective and dissociative amnesia, as point of departure to offer a ‘non-violent violence’ against colonial, anthropogenic entropy, against the *anthropic destining* of Global Warming? [see c.(F)4]
‘The film-essay Reflecting Memory is a continuation of Kader Attia’s long-term exploration of trauma and repair, both of the body and of society, and probes the legacies of colonialism, slavery, and xenophobia in our time…. With the different perspectives on grief, memory, and trauma, Attia’s inquiry into the possibility of understanding the Phantom Limb syndrome as a technique for culturally approaching absences, erasures, and ghosts related to historical trauma in the collective social body and its psyche, slowly unfolds. An amputated limb does not determine how trauma might be converted into some sort of healing, but the loss, in Attia’s view, can be used as information…. The [film-essay shows] interviews interlaced with video performance sequences that show interactions of people and mirrors. The mirrors — as body prostheses and imaging techniques — materialize the “cut” and the “suture” as the two chief conceptual and material operations in Reflecting Memory. In film theory, “suture” refers to the phenomenon by which the mind produces a narrative whole from the fragments combined through cinematic cuts, creating a semblance of totality. In Attia’s work “cut” and “suture” epitomize the violent heritages of colonialism and imperialism as well as the messy work of repairing the damages done. As reflective architectures and paradoxical techniques the mirrors extend, as Attia explains,
“the reflection about the complexity of memory, the working of memory, the duty of memory and its representation; about ‘repair’ as a form of ‘re-appropriation’, but above all as a form of resistance.”

Now imagine the translucent surface-sandwich of colonial superrepression of ‘greenhouse’ being that which cuts and remains still-between our colonial amputation, quite literally dividing the memory of the body from the organ-limb. Only thing though, it is difficult to discern on which side we stand... Or is it? Its symmetric ambiguity is illusory. The Carib with us can tell us. To interpenetrate, unfold, conjure, and re-member the amputated mnemonic ghost of the Carib is not just a moral imperative still lingering from the ‘discovery’. It is also the point of our departure towards emancipation. But to re-member and to embody does not mean we ought to continue to instrumentalise the amputated organ, the dissociated auratic surface ghost of the Carib à la Rousseau.

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Shall the amputated manifold of the Carib (just as the myriad of other colonised specimens captured in quiet desperation within the annals of so-called ‘natural’ history) continue to be an instrumental medium to observe and experiment-forth with the purpose of probing that obsolete, putrescent state of nature that is ‘outside’ and ‘under’ our mastery? The answer is No!

Like Lina, like Brecht, we say no! [see c.(D).]

She/He/It/They are here, with us, entangled, dangerous, soothing, exotic, as always. In fact, if there was ever any doubt, the specific, incessant fate of the ghostly memory of the Carib as anthropological instrument of ‘the natural’ is its power as negative index (in the photographic sense). It can either petrify, or enliven, how deeply embedded the toxicity of colonial violence is within the anthropological, ethnocentric model of science that is still driven by the North. This is evidenced by the many versions of that kind of disembodied instrumentalisation, where ‘the natural’ is still conceived as an endless resource to be reaped and raped. But we must choose. That is because those kinds of instrumentalisations [as previously discussed in c.((F), Nonlocal Site-Specificity and c.(D), Epistemológica] are still used to activate those obsolete model-concepts, such as the state of nature, and even the base|superstructure, prolonging that violent violence. It is that ‘mythical violence,’ inconspicuously taking the form of concealed urges, that prolong economic and techno-scientific modes of domination that blindly continue to assume the planet to be an infinitely endless resource, an ever-fertile ‘Mama’, or that ridiculously demonized ‘Eve.’

And here is where we say, again, No! From the fumes of those patriarchal carcasses, it is with our matriarchal linages that together become dispersed perspectives of the Carib with us that weakens the messianic destining shaping the future, not towards a terminal, erectile dysfunction, but with for sustenance of relations. As I re-mind us of the chieftain Anacaona of the Taínos, and of Benjamin’s re-affirmation of Eingedenken – of the type of memory that ‘announces the return of lost possibilities as the return of the repressed’, and that ‘signals the entry into history of those forgotten or trampled in the victory march of the conquerors’ – let’s read Rebecca Comay as she tells us that …
[t]he “Messianic cessation of happening” is thus the response to and responsibility for that which strictly exceeds all contracts or securities: “put differently, a revolutionary chance in the fight for the oppressed past”. A chance: that is, “we have been endowed with a weak Messianic power”. For a generation swept along in the “stream of tradition” or lulled into “moving with the current”, Eingedenken offers only “the smallest guarantee, the straw at which the drowning man grasps”. In the face of an “enemy [who] has not ceased to be victorious”, the hunchback’s infallible “countermove” becomes in fact the belated response to what is, as such, unanswerable: a pure promise without authority or will.  

Through that weakening of messianic destining…shall we cease to be an ‘image’ of the Carib? Well, let’s certainly not proceed by way of the dialectical niche, but by living through the cataclysm, indeed so to aspire to become dematerialised Caribbean indices [c.(C)] that point to the potentiality of weak messianic power, towards the spectrality of a messianism-without-the-messianic, to messianicity. In doing so, can we indirectly,
yet concretely point to the toxic violence of our colonial intent that has evolved as a dissociative instinct, and as an inorganic reflex towards a passively suicidal type of selective amnesia? Can we now, not quite invisibly, but translucently, as an act of non-violent violence, interrupt, or bifurcate-away from the messianic destining of technoscience, addressing the deep political assumptions and insufficiencies of the modern natural sciences, including of natural law and natural history, in lieu of Global Warming? Yes, it is a pharmakonic question that lies concealed in our bodies and between our hands – where we know the disease, and we know the organ, and we sure as hell know the cure. It is no coincidence that it is the pharmaceutical industry that has the strongest chokehold on us…

Over the 19th and 20th centuries, many men and women have dug into the depth of that concealed pharmakonic question, one enshrined with and covered by plates of stinky, inadequate assumptions. But the data today no longer speaks of long-term projections of impending doom of toxicity, but of the precarious, ecological, systemic precipices or ‘tipping points’ that are now here in front of us today… for we are driving at a speed in which our systems of detour or reversal are in gross disproportion to the vector and magnitude with which our ‘bare lives’ are being destined by. And so, feeling that you, me, and our loved ones are standing fatefuly on that disproportionate edge of that pure precipice, it is what brings me to persuade you to slowly forget the instrumentalised, fictionalised, exoticized object-Carib and become yourself re-membered, incomprehensibly, as Carib, as the exotic, spectral, diverse mystery we are to love and live with…not to under-stand and prop-against the impasse of binary division, but to embrace and translate, for yourself, ‘the keen and immediate perception of an eternal incomprehensibility’. 118

We as unmediated Caribbean Caribs cease to be surfaces for the state of nature to stand on, and rather become potent spectres, thickened curtains, or mnemonic membranes carrying and remediating memories we are still in time not to have to live through (again). And that Eingedenken, that repressed memory – the one we are obliged, beyond guilt, to act upon, and to bring forth again for you as that which is deeply embedded in the recalcitrant structures of natural history and of natural science –

is what must be *transculturated* as the insidious flow of libidinal force that conceals colonial memory; making it perceptible to you and me as the intrinsic technics that drive the acceleration of climate change.

That translated, but unmediated memory of the Carib ghost within you and me becomes *obliged beyond guilt*, not to the enslaving, *technoscientific* destining of nature, but to a duty of *negation*. It is a duty dedicated to questioning the toxic, physical, technical, and mental means that drive us to that very end. The necessary act of negating, resisting, and emancipating ourselves — indeed of unmediating *us* from the ethnocentric place-holder of neo-colonial labour — requires us to perceive, reveal, and specify the kinds of violences that can not only drive and suppress, but that can also resist and decompress the colonial memory *off-from* technics.

In his 1921 essay *Critique of Violence*, a young Benjamin robustly mobilises a dialectic about the forces underlying the power of the ‘state’ (a definition I extend to the *state of nature*). No less, he assails how the state tends to recur to the ‘natural’ as the fundamental force for law-making. He first defines the making of law and its enforcement as a circuitous opposition he calls ‘mythical violence’, as that which insidiously relies on myth to cyclically, automatically normalise the violent act of *law-making* and its necessary and ensuing act of *law-preserving*, very much as an interplay between what occurs on the way from *a means to an end*. Benjamin also makes references to other variations of violence such as *pure violence*, *sovereign violence*, and *critical violence*. But it is the provocative, elusive, and enticing notion he calls ‘divine violence’ that, in careful manner, can strangely operate non-violently. Of course, this dialectic is nuanced and complex, representing vast implications for many fields beyond philosophy, history, and justice. But in recognising its value for differentiating the ‘entire scope of the concept of violence’, Benjamin ultimately thinks of *divine violence* as a ‘problematic limit concept’, implying that we ought not to consider it to be a stance for or against violence itself. 119

With that dialectical ambiguity on our minds, let me briefly try to point to aspects of the mythical and divine kinds of violence, to consider how these notions implicate themselves, by definition, unto the power of the void of colonial memory. Let’s consider how they may manifest in technoscience, contradictorily, as destiny and salvation, as well as resistance to and emancipation from the forces for living. If at all possible, let’s try and question that contradiction by conjuring what we assume to be ‘natural’ in the law. In his poignant analysis of Benjamin’s Critique of Violence, Sami Khatib brings forth three critical points we ought consider:

‘Fate, as the opposite of freedom, originates from the realm of the mythic where man is subordinated to the will of gods. . . . with the rise of modernity and its intrinsic “dialectic of enlightenment,” the mythos has returned in the form of mythic beliefs and mythic social relations. Man’s original emancipation from first nature has turned into the subordination to second nature—to society or, as Marx put it, to the domain of the social as a naturwüschige, a naturally grown relation. This materialist insight is already at work in Benjamin’s early writings when he relates modern law to a mythic cult of guilt resulting in fate.’ (96)

‘Divine violence as violent violence does not perform a double negation in the classic Hegelian sense of becoming positive again. Rather, divine violence remains negative, unstable, impotent; as an ent-setzende, de-posing or de-positing violence it denotes neither a positive quality, a positing of something, nor a definite nor predictable event. As Benjamin writes, “only mythic violence, not divine, will be recognizable as such with certainty, unless it be in incomparable effects, because the expiatory force of violence [its force for making reparations] is not visible to humans.” (98)

‘Unlike sovereign violence, divine violence is not introducing a zone of indistinction between law and nature, outside and inside, violence and law, but short-circuits the spurious [illegitimate] dialectics that always anew inscribe life into mythic violence by virtue of suspending the law in the state of exception.’ (102)
These passages support me in sensing how the climate crisis is being actively profiled into that ‘state of exception’. What I mean is that the climate emergency is already being instrumentalised to claim ‘special circumstances’, where powerful states (imbricated with transnational industrial interests) profile themselves as indispensable, not just for profit, but to simultaneously intensify control under the pretenses of ‘resolving’ the crisis: to save humanity [a destining messianism]. That seemingly self-validating, self-generative act is then presented as ‘natural’, operating on its own, ironically, to provide ‘natural’ resources. This is the toxic datum of extractionism, and, to me, quite blatantly, that datum is the colonial impulse still-embedded in technics. It is operative at all levels of the current state of social practices of the so-called ‘developed world’. It carries its mythical violence by implicitly confusing the ‘freedom’ of coexisting with ecosystem services (latest term to represent nature) with its diametrical opposite, the terminal fate, the destining towards a toxic form of lawmaking and of control. So effective is that self-reaffirming act, that it seems invisible (to many), and naturalised into the idea that the operation of industrial extraction, and of that brand of (in)humanity is natural, i.e. that the colonisation of nature is sovereign and necessary – as a nöosphere, and as the ensuing Anthropocene – regardless of its impact on the ecosystems, and surely regardless on the impact on those persons who are seen as expendable worlds (human and non-human).

In contrast, divine violence may offer a marginal force to sidestep the seeming omnipotence of that mythical naturalisation. Although difficult to discern, it offers a ‘violent violence’, as per Benjamin qua Khatib, to ‘depose’ the naturalised power of mythical violence, i.e., by both layering and destabilising power. If we are to accept that description, that its invisibility and meaning depends on its non-quantitative character (negative x negative ≠ positive) then we can begin to sense that its divinity provides: a) not a zone, but a contrast to sense the ‘spurious’ toxicity that abounds by either emphasizing, or confusing, interior with exterior; b) a marginal perspective from where to sense and confront what is natural, and what is not, in the social; and, c) a perspective from where to register and resist the fast-approaching dangers, say the massive conflict of interest, that is to monetise our ecosystem services.
Case in point, we can see this playing-out in real-time in Brasil, where a predisposition to a ‘national economic crisis’ caused by threats to ‘national sovereignty’ are, as of today, in 2019, not only suspending dueprocess on the streets, but also outright suspending protections for the Amazon Basin. This is the kind of mythical violence, the schizophrenic double-bind of the counter-intuitive counter-intelligence that gives way to repeating yet again an impending atrocity, potentially of the scale of the ‘discovery’ (of the Americas). By allowing transnational agroindustrial, oil, and mining corporate interests to choke and coerce both the central and regional Brazilian governments, irrespective of partisan ideology, through the cheap economy of bribery and lobbying, we are ushering the most undesirable repetition of events in human — and indeed in natural — history. The ultimate contradiction is that the disproportionate exploitation of the Amazon does not just annihilate

those who have been living there for eons (human and non-human), it in fact destroys what we well now know as one of our planet’s physical and metaphorical lungs. The Amazon, in connection to all other forests of the planet, plays a key role in nurturing and stabilising the chemistry of the global atmosphere at a scale far-beyond human proportions, sustaining life for the most abundant bio-diverse eco-system... a self-generative capacity, or ‘ecosystem service’ we better preserve if we stand any chance to counter-measure Global Warming.

The illness and contradiction also manifests in the guise of ‘democratic outcomes’ — say, the recent ‘elections’ of these egomaniacal, unhinged, fascist politicians, who manifest themselves in the interchangeable forms of Donald Trump, Vladimir Putin, Jair Bolsonaro, et al. – we undoubtedly are witnessing a devastating gut-punch to the planet, and by default are assuring a path of real and indescribable suffering for the vast majority of humans, not to mention the myriad living species that are symbiotically supporting us.

And that is the point. A stupid problem of bribery and lobbying has over time been left to rot completely out of control by the wayside of that old cesspool of macho greed. The problem has slipped out of our hands and is now leading a march towards a depth of complexity that is only matched by its indistinguishable binary symmetry and duplicity. Left or right, right or wrong, black or white, female or male, ad infinitum.
But we do have a bit of time, and we do have the (divine) power. We must carefully consider how we enact it...shall we do it in ways that result in anarchic destruction of property, emboldening the corporate state to lobby, to bribe, and thus to raise taxes and prices, which would allow the state to fleece its own expenses and increase its systems of surveillance, creating more laws to restrain us...? Or shall we unleash our unmediated selves as radically remediated forms of nonlocal, yet site-specific, violent violences that infiltrate, sidestep, leapfrog, and indeed short-circuit new forms of self-regulation? Isn't this the suicidal logic itself, of perpetual growth ruled by the neo-colonial force of destining? Shall we heed the voice of the Carib that is with us, to mobilise elusive forms that produce interconnected organs, spectral infrastructures, and diverging commonalities? Shall we operate from the newfound and diverse relations we have always known, to replenish our lives along with that of the environment? By tenderly and confidently standing on the shoulders of the many peaceful scientists, artists, advocates, activists, environmentalists and all other unnamed actors who over the centuries have courageously exercised wisdom and restraint against succumbing further in-to that 'night devoid of stars' that Rd. Martin Luther King told us about in his *Strength to Love* (1963)...of the problem of engaging violence...let us reaffirm that there is another way within, neither inside nor outside; there is another violence from the violence...divine violence.

That is to say, we do assess divine violence, with caution, and with care, as a problematic limit-concept. To paraphrase Khatib, I remind us that the risky act of testing the scope of the limits of violence does create a ‘zone of indistinction, where a stance for or against violence loses its significance.’ But it is Khatib who also reminds us that Benjamin’s testing and interpenetration of violence does allow for another understanding, where divine violence is not ‘a mere signifier for something untouchable, but the inaccessible correspondence to the revolutionary deactivation of mythic violence, that is to say, of undoing law by de-posing the cycle of law-positing and law-preserving violence ... It is crucial not to conflate the divine violence with “the highest manifestation of pure violence by man,” that is, revolutionary violence as a pure means (e.g., in the proletarian general strike).’

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122 ibid. Khatib 2015, 98.
I interpret from Khatib (and from Comay before) that for Benjamin, mythic violence is not represented as a mere manifestation of the gods – not a means to an end, not just for mastery and domination – but concealed as a fateful manifestation of lawful omnipotence just as if it was the domain of nature itself. I further interpret that the artificial and terminal medium of fate – from the divine, to the human, to the technological – folds back onto itself, sandwiching us into that undesired and supressed colonial mediation of destiny that is in technical memory. It occurs over time, as religious, secular, mnemonic, economic, and technoscientific industrialisation is forced upon us as the (un)natural environment (unnatural because of the vast disproportion of toxicity this industrialization unleashes against the planet). Therefore, the ever-folding and sandwiched surface continues to compound and conflate over temporal terms, chronologically concealing the often-unchronological coherence of time (as conceived in Afro-Caribbean spiritual practices), as the technological destining of that seemingly inescapable Enframing.

As such, it is clear that the self-perpetuating destining of Gestell is analogous to, if tautologically contained in, Benjamin’s mythic violence. The two possess the fateful messianic power, ‘the “greatest perfection” of technics’,¹²³ that drives the thickening of colonial impulse of industry as law-making; i.e., technoscientific industrialisation is the natural law of Being a human being. And if we were to remain stuck and reified in that naturally unnatural law, as the Carib ‘mediated middle-man’, we would be contained endlessly in that binary symmetry of law-making/law-preserving, both thickened by their mythical violence. The Carib, as mediated instrument, remains unable either to create any critical distance by what Stiegler would borrow from Borges as ‘bifurcations’ [see c.(D)₁], or to detach-away with critical distance (breathing space) [see c.(G)₁ & c.(F)₁] to observe that it is technical memory that keeps us from differentiating that most embedded colonial impulse of self-perpetuating violent violence – that of mastery and domination upon the environment.

This is the opposite of freedom…
…and it is the opposite of relation.

¹²³ ibid. Stiegler 2018, 266.
It is colonial memory’s most insidious characteristic hiding deep as the void of our fateful fatality. That is why colonial memory feels like the rupture with capacity, as the container of dissociative amnesia, the disfigured loss of knowledge or of inaccessible data.

It is, to me, the retroactive root of Marxian proletarianization (which Stiegler retroactively distils from Socrates, and from Simondon as well), which projects insistently an endlessly illusory fertility of labour – an empty messianism of an endlessly infinite and infantile comfort of forgetfulness – assigned to the Carib in the state of nature. That mediated Carib instrument-specimen is there indeed, acting as an imprisoned middle-man absent of memory, dis-embodied the rotting colonial reflex into a symmetrical in-between object of observation and of display. ‘It’ is somewhere in-between – a doppelgänger abjected on both accounts – perhaps leaving us, as the spectral Carib, pristine, untainted, and otherwise ready to be fictionalized, not by you or I, but by the market, yet again. Perhaps. But if we are to embody the metaphorical spectre of the unmediated and emancipated Caribbean Carib, we ought not allow us to be fictionalised, that is, strictly in terms of natural history. We withhold the right to own our own fiction, because it is ours to live with, not theirs to capitalise upon.

That ‘indistinguishable zone of correspondence’ is our territory, an inverted and abjected state of nature, if you will. It is very much the languages of the same elusive forces that detrimentally accelerate climate change. But instead, through that indistinguishable zone, we begin to reject the very fictional muscle which Rousseau exercised to dominate the Carib, and instead aim to embody the potential position of a multiperspectival spectrality. Indeed, Rousseau ‘saw’ the Carib as a not-animal non-human unable to either assume the name of ‘man’ as the modern Anthropos, nor able, in her/his insufficiency, to serve as object of reflection or comparison from himself or for man. This bizarre judgement is delineated, again, by Rousseau’s misconstruction of the Carib as seemingly incapable of distinguishing property, for s/he/they lived in a ‘gift economy’. S/he/they would always blur the boundary of the idea of ‘property’ as something to be shared when it is not needed, and therefore deliver on a ‘lack of common sense’ of property – say, of ownership, of hoarding, of greed – that made him/her/them unable
therefore to have a sense of ‘home’. This judgement is what ultimately drives Rousseau to deliver one of the most pervasive dictums: that the foreknowledge of death is ‘one of man’s first acquisitions’ upon leaving the natural state. 124 In lieu of what the destining of Global Warming prescribes, I argue that what is true is the diametrical opposite. If anything is to be learned from that obsolete and putrescent state of nature, which seems still to be at play today, is that on the path of our technoscientific march, generated from the crass, anthro- and ethnocentric misconstructions, we find a complete and absolute loss of sense about our foreknowledge of death. I argue that the living (as opposed to the place-holder) ‘Carib’ always foresaw with crystal clarity – far beyond the white, colonising man – that life cannot possibly be driven by greed at its fundament, but has to be sustained, imperfectly, by generous relations with One-an-Other, through the entirety of the human and non-human environment.

Claiming for this seemingly impossible, self-less spirit would get me accused of being either a luddite, or worse, as another cheerleader for Utopia. But I would argue that I am exploring neither. I argue instead that what has been captured and superrepressed by the industrialisation of natural history and science, onto the surface of ‘greenhouse’ – in our case as the unleashed, non-anthropological Carib – was always already adequately and sufficiently existing as beyond human, and is still here amongst us. That Carib – not as mediated subject-specimen, but as performative arrivant – is an embodied metaphor that, because of its necessary elusiveness, can only operate in the realm of spectres. S/he/they, as that Carib within and amongst us, is an affective agency, a ‘weak power’, that does not look to lay fear before us. It is a haunting memory, not unlike the Eingedenken – haunting for an alternative reparation, a bifurcation back to health from the toxic destining of the Enframing. I again aim to clarify that this spectral form, this spectrality, neither rejects science nor technology. It just looks to differentiate between them. The unmediated Carib’s agency of spectrality already left the phantasmagorical behind… leaving it obsolete as a fast departure from the machinic Marxist regiment of messianic omens. Instead, the spectral agency of us as Carib then goes…

'[Even beyond the regulating idea in its classic form, the idea, if that is still what it is, of democracy to come, its “idea” as event of a pledged injunction that orders one to summon the very thing that will never present itself in the form of full presence, is the opening of this gap between an infinite promise (always untenable at least for the reason that it calls for the infinite respect of the singularity and infinite alterity of the other as much as for the respect of the countable, calculable, subjectal equality between anonymous singularities) and the determined, necessary, but also necessarily inadequate forms of what has to be measured against this promise. To this extent, the effectivity or actuality of the democratic promise, like that of the communist promise, will always keep within it, and it must do so, this absolutely undetermined messianic hope at its heart, this eschatological relation to the to-come of an event and of a singularity, of an alterity that cannot be anticipated. Awaiting without horizon of the wait, awaiting what one does not expect yet or any longer, hospitality without reserve, welcoming salutation accorded in advance to the absolute surprise of the arrivant from whom or from which one will not ask anything in return and who or which will not be asked to commit to the domestic contracts of any welcoming power (family, State, nation, territory, native soil or blood, language, culture in general, even humanity), [...]
just opening which renounces any right to property, any right in
general, messianic opening to what is coming, that is, to the event that
cannot be awaited as such, or recognized in advance therefore, to the
event as the foreigner itself, to her or to him for whom one must leave
an empty place, always, in memory of the hope—and this is the very
place of spectrality. It would be easy, too easy, to show that such a
hospitality without reserve, which is nevertheless the condition of the
event and thus of history (nothing and no one would arrive otherwise,
a hypothesis that one can never exclude, of course), is the impossible
itself, and that this condition of possibility of the event is also its
condition of impossibility, like this strange concept of messianism
without content, of the messianic without messianism, that guides us
here like the blind. But it would be just as easy to show that without
this experience of the impossible, one might as well give up on both
justice and the event. That would be still more just or more honest.
One might as well give up also on whatever good conscience one still
claims to preserve. One might as well confess the economic calculation
and declare all the checkpoints that ethics, hospitality, or the various
messianisms would still install at the borders of the event in order to
screen the arrivant’” (my emphases). 125

It is no coincidence that Derrida himself inserts this entire passage above in [brackets]. It's a little greenhouse of Derrida's own. It is that reflex of colonial drive buried deep and transparent, reflected and accentuated by Derrida’s slight sarcasm at the end of the citation, that will never genuinely deliver the now critically required emancipation from anthropocentricity. I mean that by emancipating ourselves as Carib – away from continuing to be forced to carry that load we carry as instrumentalised place-holders for the ethnocentric ‘promise’ of objective observation and validation, as so many other instrumentalised human and non-human agencies of natural science and natural history – is how the messianic force itself manifests.

Instead, the promise of being open, generous, and hospitable is the weak power away from the ultimate destining of the cataclysm we are surely fated to confront. This emancipation is not – I repeat – it is not an escape to some exterior or interior option: neither to some sort of outside in ‘outer space’, nor to some sort of endless ‘superstructure’ of interiors inside. It is precisely that binary of interior | exterior, as the most toxic reductions of relations, that we are here to avoid. And indeed, by tossing and turning on the landscapes of our stroll is how I find the material and motivation to depose and depart ‘greenhouse’; that by emancipating the Caribbean Carib with us we allow a deeper deposition and dis-play of the empty misnomer that is ‘greenhouse’, in its superstructural – social and technological – form, as the dematerialisation of the empty metaphor that our self-delusional, certainly impossible severance from nature, as either an interior or exterior space, has become.

This is not about containing a middle-ground in-between, as a contradictory, petrified status quo. It is about not remaining hypnotised by the comfy, unwitting confluence of a blurred discourse between what is physically or transcendentally inside or outside. But if we are to have learned anything in the past twenty years, it is that our consciousness, our neurochemistries, our digitalisations into the physical world are hardly defined by the obsolete boundaries of interior | exterior. Neither interior nor exterior, neither 1s nor 0s, are capable of adequately representing the transindividuated complex of memory [see c. (D) ] that we must bring forward when reviving and remediating our relations with the environment. It is the most essential emancipation. We must
unleash ourselves from all assumptions that our worlds, by nature, fit in the neo-colonial enterprise, and that the planet provides an endless and ever-fertile standing-reserve to be extracted and exploited; that is the toxicology of Global Warming in its purest form.

It ultimately is not about formulating a ‘third’ or ‘fourth’ or ad infinitum version of nature; it is about working with the nature that we are (not against), with rational and irrational balances, fostering organic supports that can accommodate (but not be overtaken by) inorganic moments; surely with renewed notions for careful logics, surely without the self-delusional ethnocentric drive for sovereignty. At least, for the time-being, what is still encouraging is that wherever we find mythical violence, with it, there will always be, not a logical prophesy, but the potential – something like a worthy ‘promise’ – for a divine correspondence. And that is what I find most valuable from Benjamin’s study of violence, and from Derrida’s study of the spectral, in this case, the latter bracketed like a small non-monocultural greenhouse: the idea of a diverse and defined, but indeterminate and divine support structure for life. It is not that divine violence is ‘outside’ as a conflation to reify an opposition to the mythical violence of technical – and by extension, of colonial – memory, but precisely that divine violence signifies its own mobilising, performatifive dimension as an indexical form that is defined by a ‘weak messianic power’ and a spectral metaphor within the mobile acts of observation and of translation: applicable to art, applicable to history, applicable to science.
Deposing the messianic power that leads to the Spectre and the Metaphor [of the Carib]: a mini-conference

In February of 2016 and of 2018, as research activities for this doctoral work, I organised two symposia, both titled *The Spectre and the Metaphor* for the Research Week of Konstfack University of the Arts and Crafts in Stockholm. The ‘same’ symposia were initially introduced as daytime and evening events, both in 2016 and 2018, aiming to elucidate contemporary questions about *spectrality* and its relation to metaphor, particularly in alternative forms of affective agency these relations may generate. To do so, in 2016, I first brought together theorist Esther Peeren (NL) and art collective Ectoplasmic Materialism [E.M. (DK/UK/A)]. But for the 2018 symposium, along with that same group of experts, the event was approached as a revisiting, as a ‘haunting’ of *The Spectre and the Metaphor* itself, or a ‘re-enactment’ the 2016 event. In that 2018 iteration, the contributions of Peeren and E.M. were then complemented by two new guests, Vera Knútsdóttir (IS) and Annie Lowe (US), with an invited co-moderator, my colleague and artist Florence Wild (NZ). As artists, researchers, and writers, we together discussed and performed material that explored *spectrality* and the use of its metaphor in various manners. The presentations, panel discussion, and evening dinner-workshop with the attending public reiterated the meanings of ‘haunting and re-enactment’ primarily as forms of research dissemination. We did this, directly and indirectly, by addressing and discussing with each other (including the attending public) the problems we find among the hidden structures of technology, the potentialities of immaterial labour, the dematerialisation of sculpture, the transindividuated flattening of memory, and the nuances of agential invisibility. Ultimately, we explored – through discourse and by small collective actions – the sensing and displaying of the present dissociative forms that seem to affect our common
modes of perception – particularly those caused by immigrant policies, social media, and Global Warming – while also addressing the general problems of observation and perspective in research, reaching out to explore feelings and sensations beyond visual (or even intellectual) privilege.

For more on both symposia go to the *Intransitive Journal* at [http://www.intransitivejournal.org](http://www.intransitivejournal.org)

In my opening remarks for the 2018 event, I pointed to a selection of phrases Derrida abducted from Hamlet for *Spectres of Marx*. I first began to re-play them as a video loop behind me in the order in which they appear in Derrida’s *Spectres of Marx* . . . and thereafter they played in random order during the length of my opening remarks . . .

*I want to learn to live finally*

*The time is out of joint*

*That ever I was borne to set it right.*

This was an attempt to give momentum to the symposium, as well as a call for research to be a possible, open, interpretable, and un-mediated idea of ‘haunting and re-enacting’ by way of being randomly, persistently, present. In my remarks I stated:

‘If you feel you are being blurred and disconnected, of being cut by the increasingly intensified boundaries of nationalism, or of being dissociated from the environment, by the seeming insufficiency of democracy, of history, of justice, of further being disjointed by digitalisation, by the way life, self, and memories are shaped, distorted, and transposed by social media, concerned of having to be away from your loved ones, by the real and impending possibility of being deported, or wondering if you will ever see again the little house you grew up in, by the destruction caused by war or by global warming, or if you even feel as if you have been taken outside of yourself, into the out-of-body experience that is pandering
to the art market, by your desire to produce ‘authentic’ experience in 
this blurred state, because you may feel you have been oppressed by, or 
unwillingly borne to the problem of western European privilege, or 
of even being haunted by the overwhelming memories of things you 
ever experienced…

…then the matters of spectrality and of metaphor may be of interest 
to you.

So, today is about “haunting”…specifically “haunting” spectrality and 
metaphor as terms and contexts.

Yes. In a way, it may even be a tautology to suggest that it is worth to 
haunt an event, to insist and persist, to talk again about the spectre 
and the metaphor — a clumsy repeating of the same material… to 
do the boring thing of repeating the same topic, to talk about meta-
phor, again, and again… especially in this world, this world of art, 
this world of cultural production, where we change topics and make 
empty metaphors as much as we change underwear.

And that is the point. I feel strongly, very selfishly, that I cannot quite 
yet let go of spectrality, as a way to soothe myself, to “learn to live” 
with these ghosts, and if possible, to adjust my position, to challenge 
my perspective, so that I may be able to project these sensibilities 
through my own research, which is very much my artwork, which is 
very much my life, striving to go beyond empty metaphors.

So to give momentum to the event today, I will offer a bit about what 
Jacques Derrida explores in Spectres of Marx…

…Derrida pushes to challenge the core convention of history: the 
chronology of past-present-future that we seem to mechanically 
assume. By restating the strong metaphorical claim from Hamlet’s 
ghost…

The Time is out of Joint
Derrida begins arguing broadly, as many others have, that reality is never entirely clear in chronological terms, and surely accompanied by blurrings of translation,auras,dialectics,ideology,melancholy,nostalgia,technology,progress and even expectation—things and conditions that mess with conventional notions of time and life, of ourselves in the world, of Being... in other words, of ontology.

Once setting forth that instability of traditional ontology, in a play of phonemes, Derrida proposes then, from ontology, a “hauntology”... or a study of “haunting”, not just by ghosts of things dead from the past, but also, simultaneously, by other ghosts, by spectres of a future, of things to come.

We do receive Derrida’s imminent, but not hysteric sensation...that, as the ghost of Hamlet would claim — “the time is out of joint” — such condition of time being disjointed, along with the impact of digital media, would critically destabilize, dissociate, and even ‘superrepress’ our sense of “place” and of “memory”. But to potentialize such unforeseen blurrings, of where we have been, where we are now, where are we going, let’s keep our attention not on the heroic setting of anything “right”, but on what Derrida sets-off as a “hauntology” that ponders — “I would like to learn to live finally”. That’s what I want to do as well, so to learn to live, and to define what is it “finally”.

Esther Peeren, who is here with us today, is a scholar who has been studying and publishing material about spectres, in literature, and in art. Departing from Derrida, and often challenging Derrida’s positions, Peeren states:

“The spectre stands for that which never simply is, and thus escapes the totalizing logic of conventional cognitive and hermeneutic operations. It cannot be reduced to a straightforward genesis, chronology or finitude and insists of blurring multiple borders.” 126

I read here that Peeren carefully indicates a cautious understanding of the power of metaphor that comes with spectrality — of metaphor being, not just a literary matter, or even the recognized and most potent neurochemical effect our brain produces, but an amazing force that “shapes” what, when, and who, we live by.

Ultimately, the haunting of living today feels like a deep metaphorical interpretation…

And to me, these are the spectres of today… the profitable destabilisation of truth and science, the rise of nationalism, increasing global warming, or the plight of forced migration… all right here, coming from the past, or coming from the future, re-minding us of a memory we might have never lived, but sure must come to terms with, as a manner to device.

Therefore, as we haunt the Spectre and the Metaphor — as topic, and as symposium — we interrogate me, and we interrogate the panelists… about the broad providence of spectrality and its formulation of metaphor as research matter for living.’

Specific to the symposium and re-enactment as forms of research and their dissemination, I wanted to expose my interests to one of the various kinds of methods of general research; in this case, to interrogate a group of experts on the subject-matter, and to interrogate myself, through the symposium as mode of research and of publicity. I feel this registered as a genuine, still open-ended method of investigation, with the public in attendance (and now with you as well), with research itself as the act of ‘publicity’ and ‘discourse’ that the symposium, as social prop, has long-offered. Surely not least, I feel also that the collective ‘haunting’ as a persistence, as an insistence upon a subject-matter, is itself a form of sharing and of dissemination. The care we take to heed and create awareness about the elusive complexities of spectrality, and about the agency it carries for ‘conjuring’ embodied metaphor — as literary matter and neurochemical affect — can together yield a worthy hauntological compound, no less as what Esther Peeren coins to be the Spectral Metaphor.
All participants offered feedback about their experiences during the symposia. All are worthy of review (which, again, you can access on the *Intransitive Journal*), but I take the liberty of inserting a key segment of a reflection made by Esther Peeren (submitted few weeks after the event, titled *Simon of my Friend*):

‘Hauntings are about preventing us from moving on too easily, from declaring the past over and done with, but also about pushing us to anticipate the future (the next appearance of the ghost) and to take responsibility for how our actions in the present will affect this future. Haunting, as a structure of repetition, is a kind of déjà vu, but one that locates in this seeing again the possibility of seeing anew. Haunting is, ultimately, about the difference that emerges from repetition, from sustained attention to the same (like reading Derrida’s *Spectres of Marx* [sic] for the umpteenth time and always finding it speaks to me in new ways); what it shows is that what seems to be the same is never actually the same. Therefore,
even though some of the same people will gather today to discuss the same questions, the event will be something else, something more, and it will be something more precisely because this second time is another time, a time that, in Derrida’s words is “repetition and first time, but also repetition and last time,” as it is both placed in a series and singular as “the event itself” that will never re-occur in identical form.

The experience of a seeing again that led to a seeing anew was, for me, what this reiterated event yielded, throughout the day: seeing Luis’ greenhouses again but so much more clearly understanding how they can be seen as “spectral figures,” archives and anarchives, bringing colonial pasts and futures of environmental disaster into our present.’

(Fig.63) magnified section of America, by Stephan Kessler.
The Carib emerges from the re-enactment as spectral metaphor

The reflections presented by Peeren and the panellists, which are the result of staging an experimental ‘reenactment-as-haunting’, will continue to be of significant influence during our walk. The situated reflections of the panelists support our efforts to specify the kind of spectrality that is of most relevance: as a medium between you, me, and the ‘greenhouse’; particularly as the kind of embodied agency that we require to animate the hospitable emancipation of us, with the Carib, as spectres that sidestep and create some distance to perceive the void of colonial memory.

The re-enactments are indeed the experimental supports to set our stance to address the double metaphor contained in the technoscience of ‘greenhouse’: first, as the doppelgänger, of ‘greenhouse’ and the greenhouse, that haunt Global Warming; and then thickened as triadic spectre, of three interpenetrating surfaces. Those surfaces are: (1) the embodiment of the amputation...of the long-gone memory about the moment before man breaks and ruptures-away from nature; (2) the glassy surface that unwittingly compresses, as in-between material that forms our technoscientific enframing, as in-formant; and (3) the surface that envelops and displays the strange type of aura of technical superrepression, in this case of the societies that were selectively fore-gotten into the violent anarchive that still is the ‘discovery of the New World.’ I propose that the triptych releases a non-instrumental conjuring of the Carib, as that spectral agent that thickens and gives body to the covering super-surface, say a curtain ready to reveal the potential for ‘greenhouse’ to serve as a mnemonic membrane. The latter may reveal the inherent colonial reflex ingrained in the anthropological machine, all the while it also represents a possible understanding of a future memory, of a kind of living, in a world of many worlds, that is not predetermined, but still yet to come.
In a manner of speaking, the Carib is indeed a spectre that is neither properly ‘human’ nor wholly ‘other’, neither civilized European nor purely ‘natural’. But that is no phantasmagoria. As per Melville, and Peeren, from their respective perspectives, we can sense there is an agential, not mechanical, potency of our dispersed, elusive figure that may constellate another aura, one that may guide us towards resisting the destining, carefully repeating, and remediating the very contradiction it represents – of memory and of forgetting, of what is to be ‘home’ and aware of the Enframing, and of what negotiates the archive from its own potent anarchive. That dispersed, agential potency, particularly in regards to those dubious fundaments of natural history we so desperately need to revise, is what may remediate, not reinvent, Global Warming as discourses, languages, and translations, from multiple perspectives. No doubt, the potential of an unconcealed memory of us, standing with the Carib, may be subject again to that collapse of perceptual distance caused by the homogenised perspective and colonial mode of technics. But if treated carefully, it may provide a retrievable sense, and epistēmē of home while projecting an unimaginable, organic memory beyond the threat and fateful guilt of Global Warming.

And as I prepare to conclude this convolute of Colonial Memory by elaborating that potency of the anarchive, I leave you with a short anecdote that recently conjured, right in front of me, of the unmediated Carib I have been intuiting. In the summer of 2018, I applied and was admitted to present my doctoral prospectus at the ‘Deconstructing Green’ conference organised by the European Society of Literature, Science and the Arts (SLSA) and the Department of Arts and Cultural Studies (IKK) of the University of Copenhagen. The event was an ambitious but fairly straightforward affair: keynote lectures with smaller ancillary lecture panels. I of course was confined to the panels, under the unassuming program of an excellent ‘post-doc and PhD master class.’ Although I was aware that my peers and three of the keynote speakers would be present, I was unaware of who would address my work, much less be assigned to directly respond to it. But, just as was getting ready to put up my slides on the screen, the painting and tableau vivant of America by Stephan Kessler came alive, right there in front of me…
Now, if you are Latin American, and are in the circles of art and environmental activism, you may be like me... where I would hear rumours of a transgender activist and ecologist conducting consequential work intersecting the most complex of worlds in Colombia. But, it was not until that moment, that she, Prof. Dr. Brigitte Baptiste sat in front of me in that seminar room at the ‘Deconstructing Green’ conference. Baptiste is not only an ecologist and scientist, she is also the director of the reputed Humboldt Institute in Bogotá. Her work has been particularly noted, not just for its scientific and environmental merit, but also for the places and contested political discourses she addresses. She writes not only about issues of gender and human rights, but also about how civil war, and those who are parties to it, threatens the environment while at times unintentionally preserving it from exploitation by state and business. Her personal life has given her what many observers, including myself, believe is an unusual, elusive, certainly eccentric and sophisticated sense of what environmentalism ought to become.

(Fig.64) Brigitte Baptiste. Photo Source Antonia Zennaro.

Baptiste writes that:

‘Quantum physics plays with uncertainties, and there are fantasies, models, scenarios that are speculative, but are interesting and offer new hypotheses to develop new paradigms. In ecology, you have lots of uncertainty, lots of space to imagine, as we’re talking about complex
living systems. The laws aren’t so straight… Classic scientific categories are constructed to reinforce the qualities of objects, to allow them to be identified ever more certainly. Modernity necessitates this; it’s indispensable for the development of a technically advanced civilization. In biology it poses problems. We have to be conscious of the tendency to excessively prize and presume stability. Even the species concept in biology does not withstand close scrutiny. When you fix your sight on an organism, you think you have it — until it starts to disappear in a network of trophic relations and genetic variability. So nothing is really stable. A “queer ecology” — or even a responsible science, we might say — would work to balance a recognition of what’s been done epistemologically and ontologically to get us to where we are, and also return to the origin of certain questions, to embrace doubt. Is that forest really the same forest we thought it was 10 years ago? And that’s the kind of thing that causes angst. So that’s my personal view, that the limitations of our capacities to objectify something affects ourselves as well.”

Through the life and work of Brigitte Baptiste, we are given a nuanced array of evidence about the vast scales between land-surface and living-relations that we need to carefully address. She no less offers that those scales must be engaged and addressed not just with precise and proportionate responses, but also with an openness to unstable fluctuations, again, as our control of life may ‘disappear in a network of trophic relations and genetic variability’. Her personal, Latin American trajectory — within an environment caught, for several centuries now, between the violent push and pull of North/South American geopolitics, of colonial anthropogenic extraction; enormous but invisible forces of bullying business interests; of natural decay, social oppression, and of resilience — informs us of the invaluable dexterity that comes with a predisposition to identify the core nuances related to gender relations and their potent role in creating new types of every day, socio-environmental forms of life. Her scientific trajectory informs us of the invaluable perspectives that comes with managing the profoundly irrational and contradictory powers that, still within the superstructures of ‘classical science’ — both

technically and socially speaking – enable her to flow in between these calcified, often racist, misogynist, homophobic spheres without hiding in a deceitful manner, but in the most obvious and public of ways.

Those intelligent and intuitive trajectories, specific to the extremely complex present of Colombia, reflect a productive practice that differentiates, emboldens, and interfaces science and activism. What she refers to as an evolving ‘queer ecology’ does seem to already challenge the so-called conventional wisdoms, no longer responding strictly to ecological or political standards (or their sovereignty). In a paper she published recently specifically addressing the issues of forestation and biodiversity, she makes immediately evident that there are no easy or ‘straight’ answers to the questions raised by the planetary environment we are facing. One would conventionally think that, after 50 years of civil war in Colombia, a peace (as precarious as it still may be since the results of their national elections of 2018) would bring immediate prosperity and access to development. But Baptiste and her colleagues immediately warn us of the danger of such an ‘obvious’ assumption, and urge us to try and understand that the war – for all its awful atrocities, which included reprehensible environmental damages – did prevent the destruction of enormous areas of land, which, given the inability of state/business interests to deforest and exploit them, became de facto areas of conservation. At the same time, it led to a significant resurgence of small and medium farmers whom protected forests, animals, water, and diversity simply because it was in their interest.

‘[Post-conflict] degradation and biodiversity loss are clearly problems that need special attention. However, in some regions the high levels of landscape connectivity caused by the conflict have sustained a variety of species in an anthropogenically accelerated beta diversity turnover. [Ultimately,] Post-conflict forest biodiversity and the associated diversity of local land/resource use ecosystem services can be assets rather than impediments to investing in biodiversity-friendly productive and extractive activities. An inclusive development that provides incentives for small, medium and large holders to plant trees, manage forest stands and conserve forest fragments has the potential to secure the sustainable provision of ecosystem services (that is, the mitigation of the impacts of droughts and floods) as well
Baptiste’s work cannot, of course, be reduced to these citations. But it is palpable that her and her colleagues have been able to observe through a set of different, unmediated eyes. Their perspectives – which seems to take a situated position similar to what Susan Star (and Lauren Berlant echoes thereafter) suggests should be ‘infrastructural’ perspectives 129 [see c.(D).] – may allow the translation of often-unperceived data and behaviours fluctuating within these complex systems, in manners that do transcend the spherical, limit-superstructures of natural history, natural science, and of natural law. Such infrastructures may inherently question, not unproductively, both the reified nostalgias and the insidious drives of libidinal energy that seems contained in the colonial memory, and of accelerating climate change and its technics.

It is therefore, to me, no coincidence that the ‘apparition’ of Baptiste in front of me during the conference was not that of a deity to revere, but of a compelling spectre of the transgendered being to be heard… just as if she inhabited the painting by Kessler, as a transpositioned apparition of us, as the transculturated, future (surviving) citizen… not as an appropriated and instrumentalised ethnocentric object, but as an embodied, spectral metaphor of the Carib, as a plural object-relation that we are to emotionally become. Precisely as an instantiation of a queer divergence we must all be hospitable to, to an openness to Diversity, in all its forms, as clearly the one constant we find in nature, the one that most fundamentally undergirds evolution; that allows for the beautifully unstable balances of life.

Baptiste is less to me a bifurcation, and much more so a reticulation, from within the Enframing, allowing a degree of critical, perceptual dis-


129 “An infrastructural analysis helps us see that what we commonly call ‘structure’ is not what we usually call it, an intractable principle of continuity across time and space, but that it is really a convergence of force and value in patterns of movement that’s only solid when seen from a distance.” - Berlant, Lauren Gail. ‘The Commons: Infrastructures for Troubling Times#’. Environment and Planning D: Society and Space (vol. 34, no. 3, June 2016, pp. 393–419) 394.
tance that does not splice into a binary of our future neocolonial selves and of our past colonial desires, but of a pluriverse of many possible worlds. That in the recognising of you and I, as the un-mediated Carib, we parse these forthcoming yet obsolete warnings of destining — of that structuring-forth of the self-fulfilling delusion of a predetermined messianic prophesy. We crash the box and unleash Derrida’s passage from its [brackets] to embrace ‘the event that cannot be awaited as such, or recognized in advance therefore, to the event as the foreigner itself, to her or to him for whom one must leave an empty place, always, in memory of the hope — and this is the very place of spectrality. …like this strange concept of messianism without content, of the messianic without messianism.’

Claiming the Caribbean Carib perspective

— by sidestepping our objectification as instrument of observation and standing-reserve, the one that further hardens the glowing ghostly aura of colonial economy perpetuating the justified mode of our bare lives —

we ourselves instead turn infrastructurally to search for further reticulations in the very places that the violences take place. Returning to those places — not unlike where the most putrescent of statements, the one once so openly pronounced by Svante Arrhenius, as he terminally convicted the ‘human races on the lowest grade of evolution’ — we now so blatantly find what undergirds modernity’s thrust to continue to dictate the forces which reflect, actually, what we could now easily claim, that it is the human races on the highest grade of evolution who live in inferiority…expecting, inhospitably, that ‘tomorrow and yesterday have no interest for them, except in so far as their special daily cares are directly touched.’

That reversed statement is a summation of the illusory nature of the colonial, as the analogous statement that facilitates the fearless unaccountability for the objectification and oppression of the Other, whether in human or non-human form. We find, there, the analogous, modern, reductive and delusional incision and amputation of interrelations we made between us and nature — just as in the case of the misnomer ‘greenhouse effect’, understood as a ‘technology’ — turned into the
delusion of interior and exterior that limits our ability to accept that which we cannot but only marvel at...at the breadth of interrelated and interdependent diversities we need for planetary survival; delimiting our ability to perceive the complexity of living.

I therefore am compelled to continue to display the un-mediated forces of environmental form in manners that:

1. reticulate perceptual distances to destabilise the reified, anthropological state of nature and its messianic force against forms of careful play and display;

2. interpenetrate colonial memory, not as a kind of capacity for historical memory, but as an act of making-sensible the non-binary boundaries of technical memory;

3. revert the colonial impulse into a type of reflex for organic reparation of the environment, against the insistent and insidious rupture from nature that is caused by the anthropocentric aura covering the colonial, gangrenous ghost that is still ruling our Enframing.

From that triad, a type of aura may emerge to go beyond the unproductively obsolete notions of phantasmagoria, and instead transform and emancipate us as an affirmative auratic interplay of new-found relations through spectral agency.
(Fig.0) Anarquivo Negantrópico: Prototype #01 for Freia Pilar, 2017.
[see www.intransitivejournal.org]
REMEDIATING THE INDEX
convolute (C),

REMEDIATING THE INDEX THAT IS THE GREENHOUSE TECHNOLOGY

ABSTRACT:
If there is a beginning to the research-work here before you, this is probably it; here at the ‘index’, somewhere around the middle of the edges of the margins of our stroll.

Several indices do appear elsewhere, as sections of the book, i.e., as typical referential listings, for instance, as the *Index of Terms from the Scaffolds*... pointing retrospectively to the page-numbers where the definitions of terms may be found; and in this case, with a bibliography specific to each term. But, I also approach the index as a semiotic figure that is specific to the spatiotemporal condition of ‘greenhouse’. The indexical figure I look to explore part of the icon-index-symbol triad of the sign (according to C.S. Peirce). It is a semiotic that points to the non-local, non-binary, non-dialectical, non-chronological aspects of ‘greenhouse’. It is a figure that operates as both an analytical and referential placeholder.

The convolute is supplemented by a revised visual montage about ‘greenhouse’ that I submitted in 2016 for the published title ‘Greenhouse Doppelgänger Deposed: An Indexical Prototype...’ appearing on Volume 1: ‘Rethinking the Social’ of the book *Architecture in Effect* (Actar, 2019). The revised montage (as an adapted prototype) holds a series of ‘plates’ with captions pointing to the evolution of the technology of the greenhouse and its metaphorical subsets: as chronotope, as social pedestal, and as a marginal genealogy questioning Global Warming.
SCAFFOLD OF TERMS for c.(C)

[FIND SOURCES OF DEFINITIONS AT THE INDEX OF TERMS pp.733-757]

**index (n.) p.744** is a semiotic form that mobilises the act of displaying. I see it as the quality and potential of an object-relation to ‘points-to’ a constellation of appearances before our perception and inference. I trace that ‘moment’ from the work of video artist Paul Ryan, who in turn traces it from Charles Peirce’s broader complex of semiotics, which codifies a fundamental challenge to dyadic structures of inference. For Peirce, this meant that the conditions for that semiotic – in his deep concern with the processes that codify all operations of inquiry and ‘research’ – would rely entirely on ‘triadic’ relations, strongly suggesting concern over dimensional position rather than dialectic direction. He named his most essential ‘categories’ of perception firstness (a vague state of mind as feeling, a sense of possibility), secondness (the reaction or resistance to that first feeling or possibility), and thirdness (the moment when one forms, or mediates, an ‘interpretant’ that mediates or ramifies a sign about an object, leading to purpose or habit). This triad leads then to the nonlinear relations that flow between sign, object, and interpretant. And, within it, the state of the ‘sign’ itself, where we find the ‘index’ as that which is between the ‘icon’ and the ‘symbol.’ As the ‘sign’ stands for its object, Peirce states that: the *icon* stands by its own quality, such that it resembles the object, regardless of factual connection and of interpretive rule of reference; or the *index* stands by factual connection to its object, regardless of resemblance and of interpretive rule of reference; or the *symbol* stands by rule or habit of interpreted reference to its object, regardless of resemblance and of factual connection. Within that triadic, the ‘index’ is an active object-relation which points-to what may, eventually, unfold and disappear in your mind as an applicable semiotic for one or many other perceptions, functioning well beyond intent or prescription.

**heterarchy (n.) p.743** is a system of organization with which components are either unranked (non-hierarchical), or possess the potential to be ranked a number of different ways. Definitions of the term vary
among disciplines: in social and information sciences, heterarchies are networks of elements in which each element shares the same horizontal position of power and authority, each playing a theoretically equal role. But in biological taxonomy, the requisite features of heterarchy involve, for example, one species sharing with another species from a different family a common ancestor which it does not share with members of its own family. This is theoretically possible under principles of ‘horizontal gene transfer’. (Artist and semiotician) Paul Ryan draws heterarchic and intransitive values from topologist Warren McCulloch, so to find alternative forms of classification while exploring his Earthscore notational system, as well as for facilitating the relational interplay and overlaps of role-plays for his Threeing practice. Earthscore and Threeing (both stemming from the topological Kleinform of the Relational Circuit) are practices dedicated to resisting and remediating binary values that lead to ruptures and impasses in human-non-human relations. Heterarchy is best described in juxtaposition to hierarchy and / or hegemony. In a hierarchy, one assumes that if A is above B, and B is above C, then A must be above C. In heterarchy, however, C may be above A even if A is above B. Importantly, heterarchy does not denote the absence of hierarchy; heterarchies are instead made up of topological overlaps and ever-changing hierarchies. In a heterarchically organized structure there are no ultimate tops or bottoms or exteriors or interiors, even though superiority and inferiority may temporally exist in manners which hold their own potency and contributory characteristics.

pedestal (n.) p.749 is traditionally thought of as that which supports, elevates (physically and figuratively), and thus ‘frames’ a sculpture. We begin to sense the challenge to that ‘framing’ of art in the 19th century. It is then that modernity changes sculpture as a thing that can be produced, set, moved, and set again without considering intent, content, context, and/or materiality. According to Rosalind Krauss, the pedestal is fetishized and ceases to be ‘an important part of the structure since they mediate between actual site and representational sign’, only to ‘operate(s) in relation to this loss of site, producing the monument as abstraction, the monument as pure marker or base, functionally placeless and largely self-referential’. Ironically, that loss makes the pedestal itself a site of contest. Perhaps the most obvious moment of that contestation is when Degas set his Dancer on a wooden ‘dance floor’. It has been argued that this ‘move’
was pivotal in that it allowed the ‘ground’ as pedestal to be seen in a completely different way, and, as such, heralded the commencement of what later is categorised as site-specificity and ‘the expanded-field of sculpture’. From that moment on, the deployment of conceptual and performative art practices have been leading to far-reaching demonstrations of what materialisation and dematerialisation may mean for sculpture throughout the 20th century. But in that movement, particularly in regards to dematerialisation of the art object, as well as in regards to the concern over Western modernity’s ruptures from the natural (and even from the social), I wonder where, and when, one may be able to demonstrate and display those ruptures themselves as ‘object-relations’, particularly in regards to transindividuation and hyperobjectivity. I have been working with this query as subject-matter through several of my works such as the Turtle, Nonsphere, and the Immediate Archaeologies series, and along with the Anxious Prop collective. As iterative, collaborative, and research-based explorations, I continue to put forth a revision of the pedestal as situation, prop, and infrastructure in relation to the staging and display of interface, debate, and performance. It is a continuing labour, one that may provide alternative spatio-temporal conditions, networks, grounds, fields, planes, and surfaces that may facilitate multiple perspectives (human, non-human, marginal, diverging, etc., see ‘social pedestals’).

**experience (n.) p.741** ranges widely and wildly in its definitions, and thus is very difficult to explicitly set. For a generous version I turn to Joan Scott who tells us that ‘[i]t is not individuals who have experience, but subjects who are constituted through experience. Experience then becomes not the origin of our explanation, not the authoritative (because seen or felt) evidence that grounds what is known, but rather that which we seek to explain, that about which knowledge is produced. To think about experience in this way is to historicize it as well as to historicize the identities it produces. This kind of historicizing represents a reply to the many contemporary historians who have argued that an un-problematicized “experience” is the foundation of their practice; it is a historicizing that implies critical scrutiny of all explanatory categories usually taken for granted, including the category of “experience.”

**ecology (n.) p.739** is here shaped largely by the context of anthropocentric sovereignty as described by Mick Smith. But, instead of explicitly...
defining ‘ecological sovereignty’, which we will continue to visit and
remind, let me cite Isabelle Stengers and her definition of ecology,
which I’d say de facto removes the problem of its embedded anthropo-
centricity. She tells us that ‘the way a practice diverges characterizes not its
difference from others but the way it has its own world mattering, the values that
commit its practitioners, what they take into account and how. It communicates
with the idea of an “ecology of practices”—not a stable harmony or a peaceful
coexistence but a web of interdependent partial connections. Ecology is about the
interrelations between heterogeneous beings as such [human and non-human],
without a transcendent common interest, or without an arbiter distributing the
roles, or without a mutual understanding. Conflicts of interests are the general
rule but the remarkable events (without which only the triviality of predator prey
relations would exist) are the creation of symbiosis or the weaving of coevolu-
tions—that is, the making of connections between “beings” whose interests, whose
ways of having their world mattering diverge, but who may come to refer to each
other, or need each other, each for their own “reasons.”’ Undoubtedly, this defi-
nition relates to Susan Star’s own (Ecologies of Knowledge) and I feel will
return to help us be mindful of the propensity ecological practices have
towards falling into further reifying human privileges and sovereignty.

**aura (n.) p.734** is often considered to be a glow, or ‘ghostly’ quality,
or barely perceptible energy that envelops a person or an object. That
radiating glow often splits as either a persuasive seductiveness or a dis-
comforting sensation emitted by the entity being perceived. For Walter
Benjamin ‘the concept of aura…, with reference to historical objects, may be
usefully illustrated with reference to the aura of natural ones. We define the aura
of nature as the unique phenomenon of distance, however close it may be.’ (Ben-
jamin, W. 1968: 222–223). Benjamin (and Heidegger among others)
sensed that the ‘distance’ incited by aura is that which becomes decisive
for perceiving ‘authentic experience’ — of life, of history, of art, of being
— as one that is often akin to fragmented interrelations and even shock,
‘forcing the universe to open itself up to penetration by the human sensory
apparatus’. Conversely, for Benjamin, the phenomenon of aura is also
intrinsic to technology, a technological aura that, through instrumenta-
tion, may manifest the same fragmented phenomena as an inauthen-
tic, protective, compensatory, and mechanical ‘surface-unity’ that he
would refer to (from Marx) as phantasmagoria – i.e. it ‘doubles back in
the form of illusion, taking over the role of the ego in order to provide defensive
insulation’ (Buck-Morss, S. 1992: 33). Simon Cooper interprets, from Benjamin's magnum opus, the Arcades Project, that ‘if the experience of mechanised labour and the shocks of modern urban existence cause life to be lived on a fragmented, superficial level, then the phantasmagoria renders such surface experience into a state of illusory plenitude.’ Over time, Benjamin’s discourse on aura evolved into suggesting that the humanisation of nature through aura does not seem to arise from an anthropocentric understanding. He rejected any such assumption that humanising nature would involve seeing the ‘forgotten human residue in things.’ (Cooper, S. 2002: 60). Therefore, a more primordial sense of aura emerges; one where, according to Rebecca Comay, ‘the (re)experience of aura...exceeds the egocentric grasp of a humanistic self-consciousness and indeed points to a humanity beyond self-production and control’ (Comay, R. 1992: 148). Howard Eiland ultimately reminds us that in his last years, Benjamin would express in his diary that 'things see us...their aura propels us into the future', thus emphasizing the ultimate problem of aura, as a messianic aura that may provide an authentic sensation that goes beyond anthropocentric egocentrism, all the while driving the false promise of technological saviour, and of messianic mystification.

spectral metaphor (n.) p.755 Esther Peeren states that ‘[e]ach use of the spectral metaphor should be carefully specified and contextualized, and that it is imperative to learn to look through the eyes of the ghost as well as of the haunted. At the same time, the fact that the association is metaphorical, and therefore subject to re-orientation, indicates how, in cases where it works to disable, strategies may be devised to mobilize different aspects of the ghost in order to come to haunt or find agency in invisibility.’

terreiro (n.) p.756 is not quite a garden. As spaces for the observance and practice of Brazilian Candomblé, Terreiros traditionally take place in forests – mato atlántico in the case of Bahia – where plants are observed, cared-for, and communicated-with, but not shaped or monoculturally harvested. The plants found on that forest (small and large, from seedlings to trees) are observed as how they live alongside one another, as how they are found. The behaviour – sproutings, growth, changes, deaths – is 'read' by the Babalorixá (the community's chosen wiseperson and leader, alomg also with the elders) becoming a principal source of guidance, and thus a tresured 'being' to the community as a whole. The
Angolão Paquetan nation has a particularly powerful way of ‘reading’ their garden because *Tembu*, the most esteemed *Nkisi* (deity unique to their mythology), is the ruler of time, and thus the ‘behaviour’ of the *Terriero* both symbolises and communicates the community’s relation to time.

**environmental form (n.) p.740** is a term, closely related to index and specific to time-based and spatial art (installation, sculpture, performance, etc.), that I would like to use when referring to the perceptible moment (not limited to the visual) where figure and form become ‘precept’, or *precede* knowledge as a potential. It is a material challenge to *insight* (as defined in the fourth point of the Seven Points of Attention of ‘Florence Principles’ by the Artistic Research Working Group) that is neither perceptible as a physical object nor applicable as ‘knowledge’. It is material in that it is a palpable entwining of relations that shapes our perception, rendering the interior/exterior binary experience obsolete. In present terms, environmental form could be expressed as a dematerialised sculptural quality that loosely associates, for instance, the once-invisible phenomena of Global Warming to its engine, anthropogenic privilege. Therefore, environmental form is a prescient interplay between affect, medium, and surface, occurring at a perceptible distance that may be physical and/or virtual, that places and positions the auratic unit. I here lean on, and look to contrast, On convolute passage [F2a5] Benjamin references Marx: ‘There is talk of renewing art by beginning with forms. But are not forms the true mystery of nature, which reserves to itself the right to remunerate — precisely through them — the accurate, the objective, the logical solution, to a problem posed in purely objective terms? […] Are not all great conquests in the field of forms ultimately a matter of technical discovery? Only now we are beginning to guess what forms — and they will be determinative for our epoch — lie hidden in machines.’

**chronotope (n.) p.736** may be considered to be a 'concrete' idea that proportionately unites differentials of time and space in language and/or discourse. It is a term drawn from the essay ‘Greenhouse Chronotope’ by Caroline Jones, as well as supplemented by Simon Dentith’s interpretation of Baktin's coining of the term. In literary theory and philosophy of language, *chrono*tope was taken up by Bakhtin who used it as a central element in his theory of meaning. The term itself comes...
Breathtaking Greenhouse Parastructures

from the Russian хронотоп, which in turn is derived from the Greek χρόνος (chronos, ‘time’) and τόπος (topos, ‘space’); it thus can be translated as ‘time-space.’ Bakhtin developed the term in his 1937 essay ‘Forms of Time and of the Chronotope in the Novel.’ Here Bakhtin shows how different literary genres operate with different configurations of time and space, which gave each genre its particular narrative character. For example, the chronotopic frame of the epic differs from that of the hero adventure or the comedy. In her essay (about my work in the 3rd Biennial of Art of Bahia, 2014), Jones extends the definition by stating that ‘I want to read [the potential, collective imagination of the Terreiro] as signaling to a specific discursive chronotope in which, and where, duration is purely experiential, opposing the logic of the clock. In our anthropophagic hunger for alternatives to grinding, coordinated (and hence colonial) time, this alogical time becomes a space for looming – the potentiation of the Berrios-Negrón greenhouse – a space in which all times can be present, or no times.’

phenomenotechnologies (n.) p.751 Mary Tiles and by Hans-Jörg Rheinberger articulate how this crucial term was initially proposed by Gaston Bachelard. Tiles states that ‘[i]t is characteristic of modern science to insist on the importance of detailed and precise experiments as well as on working toward very general abstract theories. Moreover, the striking feature of its experimental aspect is its degree of technological sophistication. This is another of the respects in which 20th century science differs from earlier science. It is to capture this aspect of modern science that Bachelard coins the term “phenomeno-technique”; to advance from Baconian to non-Baconian [as he did to claim that we have gone onto non-Euclidean and non-Cartesian] science is to go from phenomenology to phenomeno-technique.’ Rheinberger further states, ‘visualizations constitute chains or networks of representation in which they refer to each other repeatedly. Insofar as they are the result of and dependent on different technologies, they form what scientists call “independent evidence.” The more closely they match, the more stable a finding appears to be. But it is also possible that one representation serves as the raw material for another. As Gaston Bachelard has remarked, the modern sciences are “phenomenotechnologies.” They bring their objects to manifest themselves in a process of construction. These manifestations cannot be separated from the technologies that make them possible.’
An index points to potentials

‘Symbolic reference, that distinctly human semiotic modality, which is based on conventional signs, has emergent semiotic properties with respect to the more basic iconic and indexical referential strategies that we humans share with all other life-forms. These three representational modalities are hierarchically nested and connected. Indices, which form the basis for communication in the biological world, are the product of higher-order relations among icons, and as such they have novel, emergent referential properties with respect to icons. Similarly, symbols are the product of higher-order relations among indices, also with emergent properties with respect to indices. This only goes in one direction. Symbolic reference requires indices, but indexical reference does not need symbols.’

The materials you and I will encounter here through [c. (C)], are largely a fractional reflexion informed by the research and experimental nature of my installations…about how the violent opacity of ‘greenhouse’ may be demystified by probing the semiotic of index as potential format for dematerialized display.

At present, and as discussed in [c. (F)], the nonlocal opacity of the greenhouse manifold seems to be at its most intense when considering how the agricultural industry, and its markets, capitalize upon Global Warming by exploiting the term and technology of greenhouse superstructures. From our Caribbean perspective, it is not a system of elusive ‘traces’, but it is a direct line that can be drawn to find that such exploitation taps ‘greenhouse superstructures’ as a valuable point of entry for unfolding the broader polemics of ‘greenhouse’. The polemics seem most entrenched at the point where the ethos of intrinsic value of greenhouse technology is dissociated from an insidious pathos that foments the spec-

tral effects of accelerated climate change. To examine this counter-intuitive counter-intelligence, I treat the greenhouse superstructure as an indexical figure that at once turns itself to be the specimen of study, its own support for observation, and its own medium for interpretation. The deliberately tautological process is set forth as a way to contrast and iterate that deep contradiction, of ‘greenhouse’ not just being the solution

— as messianic technology for future ‘food security’ —

but also for being the problem — as invisible generator for the toxicity of neocolonial power.

To conjure that entrenched polemic of greenhouse superstructures, let’s us three, you, the Carib, and I, together, set forth a prototype of an index composed of collected and reproduced materials tracing a history of the technology of ‘greenhouse’. Let’s unfold and walk on the indexical figure here presented to you, which at first glance, may read as a phenomenotechnology 131 [see c.(D)] – an experimental object and method of scientific observation that, when engaged, disappears and unfolds to facilitate, in this case, a process of splicing, deposing, and augmenting the greenhouse superstructure [see c.(G) & c.(F)]. I intuit that by physically and metaphorically walking through the semiotic quality of ‘index’ as historiographic semiotic – as an associative device that ‘points-to’ to histories, present concerns, and future prophesies and potentials – we may simultaneously cut, question, and unfurl the inert forces that are entrenched within ‘greenhouse’.

What may emerge from the process is a broader awareness about the colonial contradictions and significations of the greenhouse, as well as

131 “Visualizations constitute chains or networks of representation in which they refer to each other repeatedly. Insofar as they are the result of and dependent on different technologies, they form what scientists call “independent evidence.” The more closely they match, the more stable a finding appears to be. But it is also possible that one representation serves as the raw material for another. As Gaston Bachelard has remarked, the modern sciences are “phenomenotechnologies.” They bring their objects to manifest themselves in a process of construction. These manifestations cannot be separated from the technologies that make them possible.” - Rheinberger, H.J. Making Visible. Visualization in the Sciences – and in Exhibitions? (Edited by Susanne Lehmann-Brauns et al., vol. no.399, Max Plank Institute for the History of Science, 2008, pp. 9–23) 21.
an applicable methodology for sculptural experience that goes beyond my own intent. What I mean is that I present this doctoral study (the core and schema of which was published in the essay Greenhouse Doppelgänger Deposed) as a type of pedestal for associative display. The display occurs as we walk along the act of writing and re-writing these convolutes, as a way to walk and talk to myself. It is an iterative process that affords me the chance to simultaneously share with you these concerns while going deeper to reconsider the productive aspects of scientific and cultural observation. As these iterations and reflections take hold, they may then attest to how my installations operate as support structures, as manners of testing interfaces and exchanges. That play of interfaces and exchanges, between forms, forces, and figures is what in turn contends with the still-evolving challenges to define what are the visual and physical economies between sculptural dematerialization and post-conceptual production. By experimenting with potential associative experiences that are seemingly pragmatic, but not entirely under my control, I work to yield unforeseen environmental forms that may embolden your perceptions. In this case, to embolden the dematerialized forces beyond visual and digital limitations of colonial memory and their terminal capacity to drive accelerated climate change.

The operative qualities of interfaces and exchanges that pertain to social pedestals are specific to the way ‘index’ is defined by C.S. Peirce. According to Peirce, the intuitive and scientific process of building a question to be answered, as a hypothesis, materially signifies an index, where it ‘substitutes a great series of predicates forming no unity in themselves, unto a single one (or small number) which involves them all, together (perhaps) with an indefinite number of others’. Under that definition, a Peircean index is a non-directional, manifold object with no beginning or end. Again, inspired in many ways by the formats implemented by Cortazar’s Hopscotch (1963), Benjamin’s Arcades Project (1940/1982/1999), and Warburg’s Atlas Mnemosyne (1929/2010), the iteration here before you is another test on how the index may manifest, not as a stream of


consciousness, but as a somewhat aleatory array of ‘plates’ (as was the probe and prototype of the fold-out Indexical Prototype…). The array of plates predictably contains images and texts composing a loose historical account about the greenhouse that contend with the fantasies, paradoxes, and fallacies produced by the social misconceptions of nature and the ensuing hubris of anthropocentric intent. The individual, comparative, or collective situating of these plate-components may give fragmented hints to a deeper, ‘fractional coherence’ about colonial traces that may emerge through the historical and technological accounts, as well as through my experimental installations that explore the deeper technic of ‘greenhouse’. By entwining it as an index, I look to objectify dematerialization as a manner to augment and reform a deeper coherence about the mental, social, and environmental contradictions of resource depletion and of social digitalization that feed the logic of Global Warming.

As mentioned on the Exegesis…, the motivation to study and test Peirce’s work in this manner comes from collaborating with Paul Ryan and Jean Gardner. Ryan and Gardner worked with intense commitment, over four decades, to reproduce notational and performative – rather than representational or imaginary – languages to remediate our constitution within nature. The performative technique of Threeing, and its topological model the Relational Circuit were preceded by the notational system and artistic methodology Ryan called Earthscore. Ryan was able to initiate Earthscore by working from within the premises of Peircean thought, specifically from Peirce’s third category of inference called retroduction/abduction, as well as Peirce’s categorical triptych of firstness, secondness, and thirdness. Through Earthscore Ryan found that the intransitive potential of art as a practice rooted in the Peircean categorical triptych and semiotic inference allows us to understand our position in a continuum by being explained by two other positions without going outside the bounds of the continuum itself. He argues that this non-hierarchic way of making choices is ‘a sign of itself’, and that it is at the core of making art. This is not a dialectical opposition that objectifies and externalizes nature – it is a topological position for rethinking life within nature. This is of importance to me because the positional mode of topology that Ryan invents, in contrast to Bateson’s directional mode of cybernetics, challenges the anthropocentric assumptions about
Euclidean spatial perception. Even more importantly, it unravels the putrescent physical and philosophical binary of interiority/exteriority, a binary further enforced by illusory and fashionable discourses about inside-or-outside that the ‘greenhouse’ has been tacitly inducing for two thousand years.

There is no doubt that the oppositional quality of dialectical friction and resistance has had critically productive role in swaying the ideological forces advancing the disparities and violences created by capitalism. But it has become painfully evident that the ambiguity of dialectics is being increasingly instrumentalized by technocratic ideologues to deliver demoralizing losses of empathy, magnitude, and of mental vision. I think this problem connects to how artist and research pedagogue György Kepes referred to the disproportions of perceptual magnitudes as a decay, as a crisis of scale facing present societies – as the inability to perceive, evaluate, and embody the temporal and dimensional proportions that make living possible [see c.(F)]. Such decay does not lead to diverse differentiations, but to reductionist separations of the object as ‘absolute’, and of the relational as ‘divinity’. The resulting entropy does nothing but reinforce and mystify our finitude while stagnating the promise of that continuous differentiation: that our ability to confront commoditized determinism and fearlessly contend with the natural messiness of indeterminacy, even in the face of the false and the unknown, is that seeming purposeful uselessness which art and science can continue to confound.

With that in mind, I hope that the index here to follow unfolds for you in a manner that destabilizes your preconceptions of ‘greenhouse,’ from a strong pharmakon – as technic and technology, as gas and as effect, as problem and solution – into what it really is: a doppelgänger. As such,

134 Bateson’s insistence on logical types has to do, I think, with a lack of appreciation for what Peirce calls prescinding, and for the realm of topology before the arrival of set theory. In some way that I cannot quite put my finger on, this is linked up with his preoccupation with a Euclidean mapping of perception. In Gregory’s mind there is a strong necessity for orientation. Peirce’s categories of firstness, secondness and thirdness preclude orientation and can not be mapped onto Euclidean space. The Kleinform works completely without orientation. It embodies a positional intelligence. Left and right, up and down, front and back make no difference. Once the mind is freed to think positionally without orientation a logic of relationships naturally ensues.

135 ibid., Kepes 1961, 369 [also see Wendler 2013]
your encounter may complement your ability to unravel that set of
duplicitous, phantasmagoric functions of greenhouse into yielding (1)
a still-prescient anarchive about the violent superrepression of colonial
memory that still drives the conservation of natural history; (2) the
inversion of ‘superstructure’, revealing the all-encompassing parametric
base of agricultural sustenance to be a parastructure of obsolete so-
cio-economic models for industry; and (3) a social pedestal that augments
‘greenhouse’ into a scaleable and multidimensional model of sculpture
shaped by your own sensations, memories, and cognitions, sustained by
an associative array of dematerializing formats of display.

To interpenetrate that spatiotemporal collapse within the glassy surface
of what is now the complex technic, technology, gas, and effect, me and
the Carib will hereon place-forth for you, along with you, a genealogical
montage of ‘greenhouse’.
INDEXICAL PROTOTYPE

[for image credits see LIST OF FIGURES, pp. 758-63]
Breathtaking Greenhouse Parastrucures
INDEXICAL PROTOTYPE...

image references p.758
Breathtaking Greenhouse Parastucures
Dans la serre (‘In the conservatory’) by Édouard Manet (1879). Maison, Coutras by Lacaton & Vassal (2000).
Breathtaking renderings of isolated greenhouse communities in Holland and Denmark by Effekt Architects (above left & right, 2016), and the delightful Mars stations proposed by SpaceX (right).
INDEXICAL PROTOTYPE...

image references p. 758
According to revised writings of Pliny the Elder, the earliest-known greenhouse was a year-round medicinal garden and observatory that the Roman emperor Tiberius commissioned as a ‘specularium’ for his imperial Villa Jovis in Capri ca. 30CE (right). Visiting the site of the ‘specularium’ in 2019 (below left). In the 1930’s Italian archaeologist Amedeo Maiuri made excavations, analyses, and drawings of the site, identifying the Specularium with a question mark in parentheses (below right).
Breathtaking Greenhouse Parastructures
Various illustrations of housings and cover-structures for gardening ‘relative to the seasons’ as prototypes to greenhouses. ‘Berceau’ with vegetation (above left, ca.1400), canvas and weaved threaded exotic house for plants and birds (above right, ca.1500), partial glass and masonry (orangerie or citroniere, bottom left, ca.1600), and full iron and glass (bottom right, ca.1750).
Sonderzauberkönige in ihren wundersamen Vorbereitungen.

Breathtaking Greenhouse Parastructures
Etching of early greenhouse (above right) from *Grosser Herren Stands und adelicher Haus-Vatter*. Glass houses are already described as ‘common’ among the aristocratic farm landlords of Prussian Pomerania (Christoph Riegels see. Wittib und Erben, Frankfurt am Oder und Leipzig, 1719).
Breathtaking Greenhouse Parascuments
The ‘Great Stove’ at Chatsworth (1836-40) by Joseph Paxton served as an experimental model to Crystal Palace (above left and above right). View prior to demolition in May of 1920 (below left). Scheme for a stove-heated ‘Pine(apple) Stove’ by John Claudius Loudon (1822).
Glashaus by Bruno Taut (below) under construction for the Kölner Werkbundausstellung (Exhibition of the Association of Carftworkers of Cologne of 1914) at the city’s Rheinpark. Proposed plans and sections (below left), and under the main dome room [Kuppelraum] when completed, with Paul Scheerbart (standing far left in group photo).
In the early twentieth century, Taut qualified the glass palace as the desirable architectural form of his time (“Ohne einen Glaspalast ist das Leben eine Last”; Taut cited by Sheerbart on the frieze of the pavilion, and later by Behne in 1919). This was further reiterated by Paul Scheerbart, who in 1914 wrote the then-standard publication on the subject, Glass Architecture [Glasarchitektur]. In the same year, he also proclaimed a fictional, patriarchal world of glass-lathed landscapes in his novel The Gray Cloth, with Ten Percent White: A Ladies’ Novel [Der Kaiser von Utopia und Das Graue Tuch und zehn Prozent Weiß, Scheerbart, 1914]. The novel was written at the emerging climax of modern architecture, proposing the contested space once known as the ‘glass palace’ to be a building with some sort of special power, envisioned to become a far-reaching, global, mass surface covering all landscapes. In Glass Architecture, Scheerbart sublimates the virtues of steel and glass as the construction materials of choice, whereas in The Grey Cloth he ultimately projects the perpetuation of the interior-exterior dichotomy of glass architectures that fundamentally gives way to that contentious idea of man’s misogynist control over and above the atmospheres of ‘mother nature’.
A testicled phallus of geodesic domes covering spying apparatus at the NATO classified communications station on Teufelsberg, Berlin (abandoned 1996, left). Drop City, Colorado US (started 1965, abandoned 1972, above), and Buckminster Fuller at the Black Mountain College art school designing geodesic and tensegrity domes with Kenneth Snelson, among others, and testing geodesic domes (below left and right, 1948-49).
Breathtaking Greenhouse Parastructures
3km diameter city dome over Manhattan (1960, above left), and the pavilion of the US (Biosphère) for the Montreal World’s EXPO’67 burning in May of 1976 (above), both designed by Buckminster Fuller and Shoji Sadao. And, the Ultimate Painting (below left) by Drop Artists made at Drop City (1966).
Breathtaking Greenhouse Parastructures
Views of ephemera of *De lama lâmina*, a mixed-media work by Matthew Barney, performed during Carnaval in Salvador da Bahia (2004). These are now on permanent display at the private sculpture garden Inhotim located in the state of Minas Gerais, Brazil (2009). Its final form is a geodesic dome of steel and glass, housing a full-scale deforestation tractor and a high-density polyethylene tree model that were used as props during the performance.
'Kristallpalatset’ or Crystal Palaces were used as film soundstages, here above in Lidingö, Sweden (1911), as part of the motion picture departments of AB Svensk Filmin industri and AB Hasselblad Fotografiska.
Catalogue cover of exhibition titled *A Question About Survival: alternative research in art, resources and technology* by the ARARAT Workgroup at the Moderna Museet in Stockholm during the summer of 1976.
The group states in the catalogue that “We need to distinguish between the logical future, which is the development of the present — and the desired future, which is the world we want to create.”
Crystal Palace was the 17-acre glass superstructure designed by Joseph Paxton for the *Great Exhibition of the Works of Industry of All Nations*, held from May to October 1851.
Crystal Palace became the vast display case for many exhibitions thereafter, not only for the fine arts and industrial technologies of the period but also of the exotic, colonized 'subjects', often displaying living human, animal, and plant subjects of 'All Nations' (meaning of the British Empire).
Breathtaking Greenhouse Parastructures
View from the northeast of the Crystal Palace in Hyde Park, painting by Nash, Haghe, and Roberts London (1851). Originally set on Hyde Park for the Great Exhibition, it was thereafter dismantled, moved, and reinstalled at Sydenham in 1854, remaining there until it burned-down on 30th of November of 1936 (left).
View of the ‘Stand of the West Indies, Colonies, & c.’, during the Great Exhibition (1851, above left). Engraving of *Ethnological Stand of the British Guiana Court* ‘on loan’ from Crystal Palace for the *Colonial Indian Exhibition* of 1886 (below left). Advertisement of “*Africa at the Crystal Palace: African Loan Exhibition…*” with family captured from African Somaliland, invaded and colonised by the British (1895, below right).
CRYSTAL PALACE
THE FAMOUS AMAZONS

Natives of Dahomey,
A regiment of Women-Warriors, captured in Dahomey by the French Army, under the command of General Dole, and afterwards released.

The Greatest and most Thrilling Scenery to be seen in England during the Summer of 1833.

"As to their Entertainment, let it at once be said that nothing so original has been seen in England for many a long day."

THE DAILY TELEGRAPH of May 18th.

SEVERAL PERFORMANCES DAILY.
The Wardian Case, displaying on the display, during the Great Exhibition at Crystal Palace (left). Wardian Cases were the miniature, transportable predecessor to industrial greenhouses, designed and patented by Nathaniel Ward, already in use by the early 1830’s. They become a key prototype to the expansion of the colonial onslaught, facilitating the forced and coordinated transplantations of specimens from their respective bioregions to the new, controlled, virtual atmospheres of experimental greenhouses and botanical gardens; initially at Royal Gardens at Kew in London, then through other botanical gardens across European capitals, namely Brussels, Paris, and Berlin.
Views of Wardian Cases being deployed and unpacked across hemispheres. These mini-greenhouses accelerated transplantation and development, for either study or for regional sale, as well as for redeployment out to the colonies on other hemispheres. By further exploiting useful tropical species, as well as slavery and forced labour in the colonies, this more efficient system for deployment of non-native species across hemispheres became of significance to the beginnings of global, agro-industrial mass production.
Both the planetary greenhouse effect and its eponymous industrial technique hinge on the capacity to conserve heat. However, to conclude that the effect created by a glass building (and its instrumentalisation as a technique) is caused by the same scale of conditions that lead to the global-planetary effect is to draw an incorrect, disproportionate analogy. Therefore, the ‘greenhouse effect’ is a misnomer.
In 1824, French mathematician and physicist Joseph Fourier (not to be confused with the political scientist of same period Charles Fourier) was the first to suggest the idea that the atmosphere of the Earth was responsible for the planet’s median temperatures. While considering the effects of incoming solar radiation, Fourier calculated that something the size of the Earth, at the same distance from the sun, should be considerably colder. Between 1824 and 1827, he proposed various possible sources for the warmer temperatures. Among these, Fourier proposed that the Earth’s atmosphere might act as an insulator of some kind. This theory has been widely recognized as the initial study of this meteorological phenomenon. But it was not until 1896, when Swedish physical chemist Svante Arrhenius fully quantified the planetary effect identified by Fourier. In paraphrasing Fourier, Arrhenius states that - “Fourier maintained that atmosphere acts like the glass of a hothouse”. Ultimately, it was Arrhenius’ colleague, Swedish meteorologist Nils Gustaf Ekholm who coined the misnomer greenhouse effect in 1901. Not long thereafter, Eckholm would claim that ‘coal heating’ the planet would be possible, and desirable. Meanwhile, Arrhenius would start the introduction of his universal manifesto The Life of the Universe as Conceived by Man from the Earliest Ages to the Present Time of 1909 by stating:

“The human races on the lowest grade of evolution live merely for the day. The tomorrow and the yesterday have no interest for them, except in so far as their special daily cares are directly touched.”
Various views of advertisements and design details of *Hothouses for the Million*, a modular, low-cost greenhouse system by Paxton (1862).
These adverts appeared regularly in The Gardeners’ Chronicle, a periodical founded in 1841 also by Paxton. Sales of glasshouses and their associated technologies increased significantly as they became much cheaper after the repeal of the glass tax in 1845, and the impact of the Great Exhibition six years later... both the system and the publication became quite profitable for Paxton.
A schematic illustration of possible future pathways of the climate against the background of the typical glacial–interglacial cycles (Lower Left). The interglacial state of the Earth System is at the top of the glacial–interglacial cycle, while the glacial state is at the bottom. Sea level follows temperature change relatively slowly through thermal expansion and the melting of glaciers and ice caps. The horizontal line in the middle of the figure represents the preindustrial temperature level, and the current position of the Earth System is shown by the small sphere on the red line close to the divergence between the Stabilized Earth and Hothouse Earth pathways. The proposed planetary threshold at \( \sim 2^\circ \text{C} \) above the preindustrial level is also shown. The letters along the Stabilized Earth/Hothouse Earth pathways represent four time periods in Earth’s recent past that may give insights into positions along these pathways: (A) Mid-Holocene; (B) Eemian; (C) Mid-Pliocene; and (D) Mid-Miocene. Their positions on the pathway are approximate only.
Stability landscape showing the pathway of the Earth System out of the Holocene and thus, out of the glacial–interglacial limit cycle to its present position in the hotter Anthropocene. The fork in the road is shown here as the two divergent pathways of the Earth System in the future (broken arrows). Currently, the Earth System is on a Hothouse Earth pathway driven by human emissions of greenhouse gases and biosphere degradation toward a planetary threshold at ~2°C (horizontal broken line at 2°C on opposite page), beyond which the system follows an essentially irreversible pathway driven by intrinsic biogeophysical feedbacks. The other pathway leads to Stabilized Earth, a pathway of Earth System stewardship guided by human-created feedbacks to a quasi-stable, human-maintained basin of attraction. “Stability” (vertical axis) is defined here as the inverse of the potential energy of the system. Systems in a highly stable state (deep valley) have low potential energy, and considerable energy is required to move them out of this stable state. Systems in an unstable state (top of a hill) have high potential energy, and they require only a little additional energy to push them off the hill and down toward a valley of lower potential energy.
The Palm House by Richard Turner & Decimus Burton (1844) at Kew in London (above). Part of the Royal Gardens complex used to house and deploy biota from, and to the colonies.

Low Carbon City Park (2016) in Baoding China (above) is an agricultural greenhouse superstructure turned into the largest solar-powered covered park in the world, namely advertised as a place to breathe fresh air (entrance fee not included).
Photogram from Tarkovsky’s Stalker.
Photogram from Dick’s and Spielberg’s *Minority Report*. 
I drijhus (‘In the greenhouse’, figure of woman in existing museum greenhouse) by Susanne Ussing, at Ordrupgaard, Copenhagen 1980. Sculpture in mixed materials: chicken net, newsprint, stone, granite, wood, zinc, etc.
I drivhus (‘In the greenhouse’) exhibition poster Ordrupgaard, Copenhagen 1980 (right). Eksperimentbyggeri i Thylejren (‘Experimental construction’) at the summer festival and encampment Thylejren (Thy Camp), organised by the Ny Samfund (The New Society) commune in Han Herred, near Thy, DK), in collaboration with Carsten Hoff, 1970 (below).
Casa de Vidrio by Lina Bo Bardi, São Paulo, Brazil (1950-4).
INDEXICAL PROTOTYPE...

Casa Klumb by Henry Klumb, Rio Piedras, Puerto Rico (1949).

image references p. 762
Recent views of the greenhouse of the Garden of the Americas (left) and City of the Future (right). These pavilions are at the abandoned, squatted, and thriving grounds of the Sevilla EXPO’92.
Juan Herreros’ buildings ‘Gimnasio en El Retiro’ (above), and ‘Planta de Reciclaje de Valdemingómez’ (right), Madrid Spain, 2003 and 1999, respectively.
INDEXICAL PROTOTYPE...  

image references p.762
Views of the community-based rebuilding the Carlos Conde Marín public school in Carolina, Puerto Rico. After being ravaged by the national economic collapse, followed by two Category 5 hurricanes, the school is transformed into a community farming centre. Initiative by Lydela and Michel Nonó, along with artist Nitzayra Canales (bottom left, far corner in front).
The Ecological Greenhouse by artist Avital Geva and friends (1977-present) for fostering Palestinian and Israeli co-operation. In 1993 the work was chosen to represent Israel in the International Biennial in Venice.
Mark Dion’s *Neukom Vivarium* (2006), downed redwood log in specially designed greenhouse installation at a focal intersection of the Olympic Sculpture Park in Seattle, U.S.A.
Derrubada de uma floresta
(c.1822–1825), by Johann Moritz Rugendas.
Mark Leckey’s *GreenScreenRefrigeratorAction* at the Serpentine Gallery London UK. View of the performance for the ‘See We Assemble’ exhibition, 2011.
Views of Pia Lindman’s *Mudhut* in her ‘Nose Ears Eyes’ installation at the Bienal de Arte de São Paulo: *Incerteza Viva*, Brasil (2016).
INDEXICAL PROTOTYPE... image references p.762
“A Marxian position on surplus would hold that it is an instrument of production and exploitation that has to be visible in the system of economies. In the post-ontological world the visibility of data surplus is violently repressed. Furthermore, it is continuously traumatised by the un-built coefficient of self-incomprehensibility and insecurity.” (Jarzombek, 2016)
Original IBM server building at Ernst-Reuter-Platz in Berlin (above) designed by architect Rolf Gutbrod (1962).

Green wall of the Citibank server farm by ARUP (2009), somewhere near Frankfurt (left).
Industrial greenhouse superstructures of the ‘Plant PhenoLab’ of the University of Copenhagen at Hojbakkegård using magenta light for their crops (separate section from conventional high-pressure sodium lamps), November 15, 2018.
Photogram of Douglas Trumbull’s film *Silent Running* (also 1972).
The ‘conservative wall’ (left) was an experimental greenhouse developed in the 1830’s by Paxton at Chatsworth, the estate he managed near London. The latter served as his laboratory for both horticulture and engineering work. The design was a predecessor to the Great Stove, Crystal Palace, and ‘Hothouse for the Million’.

Gush Katif greenhouse superstructure (right) in Gaza. Initially, it was a settlement proposed as key part to the occupation’s industrial development. Later, were used as object of negotiations when Israel withdrew from the territories in 2004–2005, awarding the Israeli settlers 13 million$US in ‘compensation’, and then relinquished to Palestinians. Palestinians destroyed them as they symbolised the territorial struggle and encroachment.
Photograms of *Blade Runner 2049* based on Philip K. Dick’s *Do Androids Dream of Electric Sheep?* (1968), directed by Denis Villeneuve (2017). Film was a follow-up to Ridley Scott’s 1982 classic of the same title (no greenhouses appearing then).
Views of Almeria for the article titled ‘Britain’s vegetable garden: The sea of Spanish greenhouses as large as the Isle of Wight where the food UK eats is grown’ (Mail Online, April 4, 2013).
Photogram of albino hatchlings in greenhouses used for breeding crocodiles near the Chauvet Cave system in France, from the ‘Postscript’ of the film Cave of Forgotten Dreams by Werner Herzog (2010).

Frederick Kiesler, Vision Machine, conceptual drawing “Do we see in a two-way system?”, New York, 1937-41, ink on paper.
DISSOCIATION
ABSTRACT:
The problem of dissociation projected by ‘greenhouse’ is yet another aspect of its industrial character. It plainly exacerbates our disconnect from the world that gives us life. Not by its capacity to conserve and project biota, but by the false power we draw from its misconstruction; one devoid of any relation to actual evolutionary timescales. Such intense disparity, as double agent of disease and cure, gives it that exculpatory potential as pharmakon, as the ‘essential’ technology to save us from the impending doom of climate crises. That said, conversely, we find that dissociation can also play several, critical roles: in cognition, for separating and isolating qualities of a perceived object; as a defensive demeanour to deflect unwanted attention; and, as a kind of temporary amnesia to protect oneself from not having to re-live a trauma, also referred to as the disorder of depersonalisation. As we walk, with the urgency to remediate our relations with the worlds of non-human persons, we find that the potency of dissociation tends to continue to broaden the ruptures of environmental object-relations, rather than serve as a protective and epistemic capacity. It is particularly toxic when dissociation drives the amputation between ourselves and the perception of the material and labour violences, the extractions that make-up the consumer object. It exacerbates our capabilities to differentiate between the psychic, technic, and collective realms, leaving us utterly, industrially disembodied; i.e., disorganized, dissociated, desymbolized. As such, dissociation may ultimately obfuscate our ability to treat, reflect, and remediate the trauma of colonial—and its amplified subset, digital—memory. Therefore, if we are to renew and foster multiple, diverse, and divergent perspectives and relations with the worlds of nonhuman persons, so to re-mediate the growing injustices that come with the environmental crises, then a broader revision and application of dissociation in regards to environment is desired. The following passages will address this potential.
SCAFFOLD OF TERMS for c.(B)₅

[nature (n.) p.747 is...trees, mountains, oceans, insects, and all that other stuff that lives, not by force, but by its own potential for adaptation, beyond the shortcomings, and disproportions of technoscience. To clarify further, it is here treated synonymously with ‘world-forming’, as discussed in the definition of ‘life’ mentioned elsewhere [see c.(G)₆]. This means that, for me, nature is not the western notion of a ‘state of nature’ as a prehistorical world of amorality or anarchy, but the general set of planetary conditions that foster the potentials for life that irremediably encompass humans as well...as far and as long as the latter contributes to those conditions, for living. Technoscientific industrialisation is perhaps its diametrical opposition forced upon as the (un)natural environment (unnatural because of the vast disproportion of geophysical and behavioural toxicity it currently causes, beyond the planet’s – and our own – ecosystemic abilities to evolve, to adapt).

rupture (n./v.) p.753 is a term, an act, and a void that will keep reappearing over and over again during our walk. It appears at times as synonym to cut, break, amputation, interruption, dissociation, divergence, or schismogenesis. It reappears because it is a key manner in which I can embody the metaphor representing the physical and literal surface-membrane that cuts between nature and humans, as layer of deposition of ‘greenhouse’. At times, the value of ‘rupture’ will seem contradictory, i.e. as a desirable effect, for perspectival divergences, marginalities, reverie, and even for encouraging the percipuum, say, for epistemic traction. But unless otherwise specified, ‘rupture’ is to signify the core problematic disconnection of relations driven by the abuse of power that the patriarchal, colonial project of humanity has engendered. It is to signify how those violent cuts, and broadening chasms [see schismogenesis in c.(G)₆] are fundamentally detrimental to the rhythmic consonance between humans and the complex, diverse phenomena (which I resist to call them ‘systems’) that allow for, and that foster-forth, life and all habitability on the Earth.

[FIND SOURCES OF DEFINITIONS AT THE INDEX OF TERMS pp.733-757]
percept / perceptual judgement / percipuum (n.) p.749
Peirce scholar Kelly Parker states that ‘[t]he percept and the perceptual judgement occur as one event which Peirce called percipuum. In the percipuum, three elements are always present: qualities, connectives, and representation, of the event as meaningful, as a specific instance of a general kind of event. These are the universal phenomenological categories of Firstness, Secondness, Thirdness.’

virtual (n./adj.) p.757 in optics, the virtual image refers to point-intersections of rays of light that meet when produced backward, eluding a real location for its projection to be perceived. Now, over the years, I have spent time thinking about, with some degree of dismay, what this word means for perception and cognition. I have arrived at a conclusion. At this moment, when writing this text, virtual means nothing to me. It is nothing, and it is no longer of relevance. The blur of the real and of the digital is so entrenched that I rather focus on how Stiegler, in my opinion, contends with the virtual, which is, indirectly, through memory. At the index of terms, you will find other references that might aid you in developing your own definition.

post-ontology (n.) p.751 Mark Jarzombek tells us that ‘[t]here is a difference between post-ontology and postmodernism. From a postmodern perspective, the loss of ontological certainty is experienced in the form of a diminished faith in metanarratives and, simultaneously as a return to the possibility of relevance of the body, everyday private experience and the local community. Post-ontology might in fact further enhance the ostensible realness and relevance of the body and its experiences and thoughts. But the realness (or lack thereof) is not the issue in post-ontology. Post-ontology dissociates Being from a judgement about what is real and certain.’

surface (n.) p.756 is initially taken to be the physical division that defines strata and layers; that splices and separates spaces; and that may be illusorily instrumentalised to demarcate the inside | outside binary. The surface of greenhouse – as technology, as building, as cultural support structure, and agricultural superstructure – is here faced with a significant degree of scepticism about its metaphorical (over)use. I want to polemicitise its power of division and transposition of space and of biospheres (even in terms of distance and aura, in regards to its ‘surface unity’ [see c.(F)4], or as a ‘curtain’ [see c.(A)2]. And, I want to also em-
bolden its translucent appearance and nightly glow projected through its ghostly avatar of industrial greenhouse, as the very master-container of the compressed, of the superrepressed violence of colonial memory. Ultimately, I would like to think of ‘greenhouse’ as say a loaded surface, or hypersurface; not in the high-tech sense of Perella, Goulthorpe or even Borradori, as a virtual, digital and/or kinetic instrument of architecture. Instead, I’d like to explore it for its auratic significance to the intransitive dimension, where I want to propose ‘surface’ to be tested as the place Bateson describes to be ‘where angels fear to tread, the region of consciousness, aesthetics, the sacred, and the relationships between them, the effort of a practice that looks to answer the ultimate question — onto what surface should a theory of aesthetics be mapped?’

**degrowth (n.) p.737** Erik Assadourian says, “…degrowth is a political, economic, and social movement based on ecological economics, anti-consumerist and anti-capitalist ideas. It is also considered an essential economic strategy responding to the limits-to-growth dilemma. Degrowth thinkers and activists advocate for the downscaling of production and consumption — the contraction of economies — arguing that overconsumption lies at the root of long-term environmental issues and social inequalities. Key to the concept of degrowth is that reducing consumption does not require individual martyring or a decrease in well-being. Rather, “degrowthers” aim to maximize happiness and well-being through non-consumptive means — sharing work, consuming less, while devoting more time to art, music, family, nature, culture and community…Technologies designed to reduce resource use and improve efficiency are often touted as sustainable or green solutions. Degrowth literature, however, warns about these technological advances due to the “rebound effect”. This concept is based on observations that when a less resource-exhaustive technology is introduced, behaviour surrounding the use of that technology may change, and consumption of that technology could increase or even offset any potential resource savings… The concept of “degrowth” appeared during the 1970s, proposed by André Gorz (1972) and intellectuals such as Nicholas Georgescu-Roegen, Jean Baudrillard, Edward Goldsmith, and Ivan Illich.’

**pharmacology (n.) p.750** is, in conventional and scientific terms, the branch of biology concerned with the study of drug or medication action, where a drug can be broadly defined as any man-made, natural, or endogenous (from within the body) molecule which exerts a bio-
chemical or physiological effect on the cell, tissue, organ, or organism. This includes the study of the interactions that occur between a living organism and chemicals that affect normal or abnormal biochemical function. If substances have medicinal properties, they are considered pharmaceuticals. With that in mind, pharmacology may be considered to be the pre-scientific notion of healing substances that include as well that of metaphorical and philosophical manifestations. In regards to the proto-scientific and ritualistic healing substances and practices, María Benedetti states that ‘popular medicine and related practices are a system of mutual support and healing carried out by people close to their cultural roots. This tradition of healing has arisen from a real need, observation, experience, and respect both for the individuals in need of the healing and for the environment that provides the tools and catalysts for the healing. . . . Connections with folklore guarantee a high probability of finding active substances. Also, traditional healers are likely to find not just one, but several uses for each plant, while the academically trained pharmacologist tends to investigate and exploit isolated compounds of a complex, crude drug specimen (plant), in search of one specific activity to counteract one particular health condition or narrowly related problems.’ In regards to its adaptation to philosophy, stemming from the pharmakon (and hypomnēmata), pharmacology is proposed as an approach to thinking through, if re-mediating the challenges of perception, externalisation of knowledge, and of memory being faced in lieu of modern dissociation, heightened by digitalisation and the climate crisis. From the most essential standpoint, Stiegler states that ‘[i]t was Socrates who opened up the question of the pharmacology of spirit that books form— and therefore also the Book, whether the Bible, the Gospels or the Koran. Capitalism arose out of the spiritual conflict that resulted from the advent of the printing press, which again divided Christianity in the service of a new therapeutics: this was firstly religious, in the form of the Reformation and Counter-Reformation, and then secular, that is, ‘political’ and ‘scientific’. After the printing press, there occurred a “pharmacological turn”, a continuation of grammatization via the reproduction of gestures by automatons, leading to machinism. In this turn, what changed was the relationship between otium and negotium: this becoming then passed through a new socialization of hypomnēmata wherein the latter eventually led to the formation of a ratio, now understood no longer as reason but as calculation, firstly in the form of those account books examined by Max Weber, and then as the mechanical reproduction of documents leading eventually to computing and ultimately to the current digital reticulation.’
technocracy (n.) p.756 Jürgen Habermas tells us that, ‘[t]echnocratic consciousness is, on the one hand,"less ideological” than all previous ideologies. For it does not have the opaque force of a delusion that only transfigures the implementation of interests. On the other hand, today’s dominant chatter glassy background ideology, which makes a fetish of science, is more irresistible and farther-reaching than ideologies of the old type. For with the veiling of practical problems it not only justifies a particular class’ interest in domination and repress another class’ partial need for emancipation, but affects the human race’s emancipatory interstate’s as such…the technocratic consciousness is not based in the same way on the causality of dissociated symbols and unconscious motives, which generates both false consciousness and the power of reflection to which the critique of ideology is indebted. It is less vulnerable to reflection, because it is no longer only ideology. For it does not, in the manner of ideology, express a projection of the “good life” (which even if not identifiable with a bad reality, can at least be brought into virtually satisfactory accord with it)….Technocratic consciousness reflects not the sundering of an ethical situation, but the repression of ethics as such as a category of life. The common positivist way off thinking renders inert the frame of reference of interaction in ordinary language, in which domination and ideology both arise under a condition of distorted communication and can be reflectively detected and broken down. The depoliticisation of the mass of the population which is legitimised through technocratic consciousness is at the same time men’s self-objectification in categories equally of both purposive-rational action and adaptive behaviour. The reified models of the sciences migrate into the sociocultural life-world and gain objective power over the latter’s self-understanding.’

technoscience (n.) p.756 Stiegler states that ‘[t]his term, which is hardly more than thirty years old, seeks to signify the non-separation of science and technology (which must, however, remain distinguished). In a word, it means that the medium of science (in the double sense of environment and medium) is technical. But, technoscience also means that science is increasingly required by the economy. Roughly, there are three scientific periods. 1) Ancient science coincides with philosophy or regional ontology; 2) Modern science (according to Koyré, the mathematization of the world and the geometrization of space) remains radically different from the technique (although Galileo uses the technique scientifically, his science remains opposed to the technique). The instruments are not yet thought of as an instrumental medium constituting a third term (intermediary) that will come to modify the situation; 3) Contemporary
science, produced by industrial change, is symbolized by the meeting of James Watt (engineer) and Matthew Boulton (contractor). Contemporary science is no longer modern science in that it intrinsically deals with industry. It is no longer a question of describing what is, but of making happen what becomes: to give birth to the world of its transformation. For example, nanoscience and from the outset a nanotechnology. We must stop opposing science and technology, but we must continue to distinguish them. Science is not reduced to technique, science has a fundamental relation to ideality. A scientific ideality does not coincide with the real but exceeds it; it is the real that becomes possible.’

parastructure (n.) p.748 today, particularly considering digitalisation and global warming, the dichotomous hierarchies of Marx’s economic diagram of ‘base/superstructure’ seem to suggest an insufficient binary model of material determinism. Over the years, as I practised with and later studied the term ‘parametric’ as it concerns to digital 3D modelling, I arrived at a text by Marxian theorist Ernst Mandel who stated that – ‘Dialectical determinism as opposed to mechanical, or formal-logical determinism, is also parametric determinism; it permits the adherent of historical materialism to understand the real place of human action in the way the historical process unfolds and the way the outcome of social crises is decided. Men and women indeed make their own history. The outcome of their actions is not mechanically predetermined. Most, if not all, historical crises have several possible outcomes, not innumerable fortuitous or arbitrary ones; that is why we use the expression “parametric determinism” indicating several possibilities within a given set of parameters’. Mandel’s non-digital nor statistical notion of parametrics left a lasting impression on me, wondering if there was a possible reassessment of his ‘parametrics’ beyond the dialectical kind. A more recent discourse that complemented my impression of Mandel was that of Lauren Berlant’s definition of infrastructural analysis, as a method that may ‘helps us see that what we commonly call “structure” is not what we usually call it, an intractable principle of continuity across time and space, but that it is really a convergence of force and value in patterns of movement that’s only solid when seen from a distance.’ Departing from this datum of structure and of parameters, beyond the retinal and the dialectical, I would like to propose that that there is another structural beast amongst us… Parastructures are elusive yet massive constructs that have not necessarily been consciously designed but that are deliberately used to exploit ‘distance’ as a fiction. Heidegger’s Gestell and Morton’s
hyperobject are conceptions that robustly reinforce the difficulties we face by our lack of perspective, of critical distance, either by extremes of proximity or of remoteness, from the failings of modernity and post-modernity, and from the toxic systems of techno-science. Distance here presents the uncanny problem where the identities and geopolitics of our environment (especially considering post-ontological discourse, or even the post-fact onslaught) become indiscernible to the ‘convergence of force and value in patterns of movement’. In turn, a spectral, ghostly, even virtual (not mechanical) system is deliberately split, polarised, and camouflaged to give the illusion of an irremediable embeddedness. Whereas Gestell and hyperobjects clearly exist, parastructures are made elusively unreal in order to exploit spectrality by confusing paranormal and parametric dimensions – mixing dissociative tactics such as conspiratorial deep politics with reductionist servo-mechanics such as parametricism. Ultimately, the ambiguity of parastructures as mechanisms of control – such as how ‘greenhouse superstructures’ are instrumentalised to capitalise upon Global Warming under the guise of ‘food security’, or how the ‘cloud’ is instrumentalised to capitalise upon the sequestering of memory under the guise of ‘access’ – may be considered as an unforeseen aspect of the ‘spectres of Marx’: as the systemic and insidious mechanisms for dissociating colonial trauma of exploitation and the ensuing depletion of natural resources and ecosystem services (both as standing reserves) that retard our already-collapsed cultural superstructure while obfuscating the ensuing revolution that may never come. Can a parastructure be remediated? Is the installation of ‘social infrastructures’ a manner in which to embark on such remediations? That is, for me, the prescient concern of our stroll.

proletarianisation (n.) p.752 is described by Marx as the loss of know-how, as a type of memory loss, a loss of craft, a loss in the ability to incur or apply knowledge as a byproduct of operating mass-production machines, in the advent of industrialisation. Stiegler (among others) argues that such loss is exacerbated, in the extreme, by way of electronic and digital apparatuses, particularly in the guise of cognitive ‘mnemotechnologies’ such as smart-phones. The loss, which already suggests to include the ‘forgetting’ of linguistic knowledge and reflex (by way of spelling and translation engines), will most egregiously extend to the very loss of our know-how-to live. That is, that our
behaviours in general – from the digital profiling of the entirety of our
selves, not just of our alphanumerical data, but even of our locations,
our image-memories, our faces and our strides – are *grammaticised*, or
rather wholly externalised and commodified as the ultimate stand-
ing-reserves for cognitive capitalism in the service of the hyperindustri-
al service economies.

double bind (n.) p.739 is an emotionally distressing dilemma in
communication in which an individual (or group) receives two or more
conflicting messages, one negating the other. This creates a situation in
which a successful response to one message results in a failed response
to the other (and vice versa), so that the person will automatically be
wrong regardless of response. The double bind occurs when the person
cannot confront the inherent dilemma, and therefore can neither
resolve it nor opt out of the situation. Double bind theory was first
described by Gregory Bateson and his colleagues in the 1950s. As per
video artist Paul Ryan, “[t]he theory of logical types was key in developing
Gregory’s understanding of schismogenesis as discussed in the article on
relationships and in formulating the double bind theory of schizophrenia.
The schizophrenic is one who has habitual difficulty in discriminating levels of
logical typing; he is constantly eating the menu card instead of the meal. This
condition results from a pattern of upbringing in which contradictory, or double
bind messages, are habitual. For example, a father says to his child, “Go to bed,
you’re very tired and I want you to get your sleep,” while the non-verbal
message is, “Get out of my sight. I’m sick of you.” The logic of relationships
I am working with is not based on naming and classifying, but on positional
differentiation in a unique figure.’ Double binds are often utilized as a form
of control without open coercion – the use of confusion makes them
both difficult to respond to, *and* to resist. A double bind generally in-
cludes different levels of abstraction in the order of messages and these
messages can either be stated explicitly or implicitly within the context
of the situation, or they can be conveyed by tone of voice or body lan-
guage. Further complications arise when frequent double binds are part
of an ongoing relationship to which the person or group is committed.

messianism/messianicity (n.) p.746 a worthy summation of this
term comes from Christopher Watkin, who tell us that ‘Derrida retains
the structure of the promise of something to come, an “endless promise” in that
it can never be co-opted or reduced to any particular determinate content. What will come is not any named Messiah but “the most irreducibly heterogeneous otherness,” which means that whatever it is it that comes, it will certainly not be what, or who, we are expecting. As for the transformation that this advent will bring about, Derrida describes it as the “democracy to come,” by which he does not mean the linear prolongation into the future of contemporary systems of parliamentary and representative democracy, but a disruptive, non-linear “event” which is unforeseeable and unexpected. . . . If we could predict what is to come then it would no longer be radically other to what already exists but an event within the current horizon of expectation, and it is this calculable predictability of the future that Derrida wants to avoid at all costs: “A future that would not be monstrous would not be a future; it would already be a predictable, calculable, and programmable tomorrow.” What Derrida is seeking to do here is retain certain formal, structural features of theological messianism while evacuating it of its determinant content. This does not mean, though, that the democracy to come is radically unknown and that, to put it crudely, it could be anything. Derrida does specify that the democracy to come will bring about the impossible concurrent realisation of absolute freedom (and singularity) and absolute equality (and equivalence). Freedom and equality are both necessary for democracy, but also contradictory because equality demands that people be thought of as equivalent, and freedom that they be thought of as singular’ [see also messianic on c.(G)ₖ].
The Greenhouse Laboratory and its Magenta Light

(Fig.65) chlorophyll fluorescence analysis on leaf specimens at IBG-2 JFZ, 2018. Source photo: Berrios-Negrón.

On April of 2018, I was welcomed by the Jülich Forschungszentrum (JFZ) IBG-2 Plantsciences Institute to do a one-week residency at their facilities. The Institute’s laboratories are primarily housed in a complex of several industrial and custom-built greenhouses. The JFZ is one of the largest research centres in Europe. And the IBG-2, which is its main plant science research lab, has various missions. They describe their primary mission as: to develop integrated bioeconomy concepts for the intensification and sustainability of plant production, with the objectives of (1) improving yield, (2) adapting the quality to various uses (food, feed, raw materials, bioenergy), (3) reducing the production footprint, and (4) adjusting processes to future climate and production conditions. Through that mission and those objectives of research IBG-2 aims to predict the impact of Global Warming on future plant behaviour and
its agriculture, and to establish standards for academic, scientific, and industrial testing and evaluation, mainly through phenotyping analysis and genetic adaptations in the plant and climate sciences, for the EU and abroad.


One of the outputs of the residency is, quite literally, what gives ‘colour’ to the work here before you. The pink/magenta palette that reoccurs in all the components of this doctoral work (the book, the online journal, and the installation) is surely not just an aesthetic decision. What I mean is that, even though it coincides with the cover of the Suhrkamp edition of Das Passagen-Werk, and has desirable associations to political and radical movements (all welcomed), in reality the decision to use this colour palette is a technical one.

What we humans perceive in the light spectrum to be pink/magenta light actually tends to foster higher rates of photosynthesis, particularly for already sprouted seedlings and young plants, to gain better stem strength. This fairly recent discovery, which was seen initially in experimental or laboratory greenhouses, is now becoming a ubiquitous aspect of industrial greenhouses. Being the 'opposite' to the wavelength that produces green in our spectrum, the wavelength of magenta (ca. 640-720nm) also becomes the colour emitted by plants when under chlorophyll fluorescence analysis - a standard procedure for ‘reading’ photosynthetic activity on plant leaves, one I was introduced to during the residency at JFZ (see Fig.65). So, while pink is desirable as a political representation of identity activism, feminism, life, and biodiversity – as core values of this doctoral work – it is more so presciently a reflexion about the conflicting values between the technical, political, and environmental dimensions that agro-industrial production may represent.

Along with the subset of the work's visual and political 'colours', the short residency also encouraged me to produce a video that reflects-upon the fascinating environment and important work at the Institute’s greenhouse laboratories. I spent time considering the unavoidable challenges of lab work with plants and the environments required for
such investigations. I mainly considered the general, difficult questions that emerge from simulating and situating such kinds of open system investigations in closed system environments. And these questions further thickened the third of my core, affirmative hypotheses:

if the greenhouse building technology grows to become the physical and metaphorical enframing to the past and future of natural history and of natural science – as the manifold of compound terms prefixed by the metaphor of ‘greenhouse’ – then its deposition may display a remembering-to-forget of the healings, transitions, and remediations away from the seeming messianic destiny of Global Warming.

One approach I used to review the hypothesis was to produce a video titled [Greenhouse] Dissociated. The video – that was in no small measure a treatment of ‘greenhouse’ as boundary object, as so defined by Susan Star [see c.(D).], was processwork stemming from what I observed and considered during the residency, all filtered with my concern about rethinking the ways we conceive of, and display, natural science and its history. In principle, the boundary object is a physical device that has different meanings in different social worlds while sustaining a structure that is common enough to more than one world to make them recognizable as means of translation, and of transition.

Stemming from it, the video references from – and strives to contribute additional strands to – the influential artwork by Kader Attia titled Reflecting Memory (2016) [see c.(A).]. Attia’s recent research on, and interpretation of Vilayanur Ramachandran’s neurological, therapeutic work on ‘phantom pain’ (people feeling physical pain in body parts that are no longer there because they have been amputated), seems to signify a potent social trauma stemming from such ‘amputations’. Attia suggests with his research and along the personal narratives of his collaborators that these amputations are generally and metaphorically a system of perpetrations driven by the deep, suppressed, concealed, and therefore forgotten histories of colonialism. Stemming from Reflecting Memory, I produced [Greenhouse] Dissociated, first, as another effort to supplement and expand-on the previous and ongoing artistic research work of a colleague/artist, and, second, to extrapolate further empha-
sis on the role of greenhouse as virtual space, messianic spectre, and master instrument of environmental ‘dissociation’.

As one of the specific depositions of ‘greenhouse’ I enact throughout the PhD, this video evolves as a way to articulate what I sense to be an instance of the technological aura of modernity. It is a reflexion upon the overlap between – and environmental amputation by – the difficult entrenchment of technology and science in the natural sciences. In this case it is one housed and enframed, beyond metaphor, by the greenhouse and all its subset compound registers as gas, effect, and technic. I take the closed-system environment of this plant science laboratory as an instance of that complicated dissociation between human, non-human, and environment. I do make a strong insinuation that the IBG-2 is a projective, futural representation of our technoscientific enframing of nature (in this case of flora, agriculture, and environment). Through the video I aim to provoke a strong sense of the facile physical and metaphorical amputation we tend to exercise upon living organisms by simultaneously cutting and colonising their existence, even in the name of future plant re-productivity by way of food- and climate-science. My memory of the residency and the video surely became an expression of the conflict such scenarios engender in me.

I could not escape how our modes of ‘dissociation’ have become automatized, of how the force of human productivity continues exacerbating its own amputation away-from nature, in this case by the greenhouse working as a housing and isolator for cutting-edge technologies used namely for plant control and domestication, agricultural robotic automation, and genetic engineering – all seeming to become digitalised forms of extracting and exploiting plant memory, behaviour, and life.

But there is a flip-side to that arguably naive insinuation...
It is terribly unproductive to just dismiss the work of the IBG-2 as mere technoscience. Extremely important work does take place in these facilities, carried-out by highly trained scientists with a passion for contending with the challenges of Global Warming. Namely, their commitment to the long-term understanding of genetic and robotic approaches to plant and AgroSciences are of critical importance considering the very real, politically motivated, economic demands (and ‘opportunisms’) being created by accelerated climate change. Such ‘forces’ that are aggressively shaping our landscapes, our economies, and our politics lead IBG-2 to produce not just cutting edge research, but also much-needed ethical guidelines and standards for such seemingly unavoidable practices, especially with the onslaught of unchecked development of genetically modified organisms (GMOs).

Indeed, I am suggesting that the powerful isolative capacity of greenhouse does of course facilitate worthy environmental conditions for experimentation, analysis and epistemic activity. It gives us the opportunity to create alternative paths that ‘associate’ new data to future potentials for human, animal, and plant life. In other words, the vast dissociative power greenhouse technology can conversely yield much
needed associative re-mediations that can help us transition-away and overcome Global Warming.

And that is the potent intersection we find ourselves at. It is at that massive conflict of interest heralded by ‘greenhouse’ and its dissociative powers – the ones that define its manifold to be such a potent *pharma-kon*, as cure, disease... and spectral harbinger – where we find the core polemic we are here to observe and confront.

**Fragments of Dissociation**

Dissociation plays decisive roles in the fields of psychology, perceptual studies, and of philosophy, where it holds different, even contradictory values. I here review those values and will make a general attempt not at uniting their definitions, but at differentiating one from the other. I will focus on that differentiation because although dissociation may be seen as a binary power, its potential, I argue, lies elsewhere. As we walk, I will talk about it as a cognitive and emotional function that has been the key industrial instrument of social abuse of modernity. The key effects have been the anesthetised senses, driven to that point mainly by visual shock, and the aestheticized reverie, which has functioned as a coping mechanism for the shock, and both have operated to the point of generating mass delusion. I am well aware that these are loaded words that are, at best, difficult to substantiate. But I will take license towards making this argument, for I do sense that it is at the root of the massive yet invisible problem that environmental dissociation represents, as the function that facilitates the suppression and concealment of colonial memory, as the chief driving force to the necropolitics and eschatology of Global Warming.
Dissociation as root of the Eschatological Double-Bind

In the 1930s, Gregory Bateson coined the term and concept schismogenesis [see c.(G)6]. It literally means ‘creation of a growing division, a rupture’. Bateson describes two forms of schismogenesis: complementary and symmetrical. He proposes that both forms are self-destructive to the parties involved. He goes on to suggest that researchers look into methods that one or both parties may employ to stop schismogenesis before it reaches its destructive stage. Learning from the Iatmul in Papua, Bateson references their way of contending with schismogenesis, as, perhaps, a queer ritual we will review elsewhere. But for now, if we were to heed the warnings of the UN’s IPCC and other agencies watching over the acceleration of climate change, it seems that the irremediable, destructive stage of our schismogenesis will begin by the 2030 deadline [see c.(A)2]. What may be behind what drives humanity towards that self-destructive stage? The term ‘dissociation’ appears to be a key force fuelling that growing, widening rupture. Recent attempts to explicate that hidden force state:

‘If the continuous flow of information can cultivate an actual consumerism of memory, the reason lies as much in the delegation of reading and writing skills to machines as in the transformation of memory into a commodity; the latter would be impossible without the former. Such is the organization of the loss of knowledge in industrial hypomnesis: it operates by eliminating — or at least by appearing to eliminate — all opportunity for anamnesis. Hypomnesic milieus without anamnesis are dissociated milieus: they are industrially disorganized, dissocialised and desymbolized. The exercise of industrial hypomneses [also referred as proletarianisation, as a loss of skill and applicable knowledge] imposes the rules and regulations of the industrial division of work on symbolic life as a whole. This industrialization of the symbolic produces a situation in which society is separated into producers and consumers of symbols. The result is the
destruction of the symbolic as such.' 136

‘There is a difference between post-ontology and postmodernism. From a postmodern perspective, the loss of ontological certainty is experienced in the form of a diminished faith in metanarratives and, simultaneously as a return to the possibility of relevance of the body, everyday private experience and the local community. Post-ontology might in fact further enhance the ostensible realness and relevance of the body and its experiences and thoughts. But the realness (or lack thereof) is not the issue in post-ontology. Post-ontology dissociates Being from a judgement about what is real and certain.’ 137

Departing from these technical and ontological criteria that position ‘dissociation’ at crucial causation and effect, we will address the context of how North/Western human thinking, as pervasive, patriarchal structure, has ruptured, depersonalised, and amputated life from the biodiversity and non-human realities that sustain us. This kind of dissociative power exerts a unique type of violence that now has reached geological scales for its impact on life’s operative flows on Earth. This perhaps is the most elemental aspect that points to what motivates me to ‘abduct’ and depose greenhouse as a technology – for it is quite literally, non-metaphorically, the physical, psychical, and technical manifestation of that power. So compelled I am by this sensation, by the materials and perceptions I have been gathering through this doctoral work, that I dare venture to suggest that the ‘invention’ of the technology we refer to as ‘greenhouse’ marks the beginning of the Anthropocene.

I am aware of the load such a claim carries. And in no way do I ignore the other points of demarcation that have been proposed to indicate the beginning of the Anthropocene, whether it be the bulging of the cortical fan in the cerebral cortex, or the emergence of human spoken language; of lithic tools; animal and vegetable domestication; agriculture; written language as form of memory; the watermill; the printing press; the


137 Jarzombek, Mark. Digital Stockholm Syndrome in the Post-Ontological Age (University of Minnesota Press, 2016) 94.
steam engine; or the nuclear bomb – these all mark initial, nascent moments in the ongoing duration of the Anthropocene. I further embrace important propositions such as the Capitalocene, or the Anthropo-scene, or the Anthropo-not-seen, or the Chthulucene, which aim to question and transform this present, entropic geological epoch. That said, I feel strongly that instead of making more titles, I rather stay with the trouble too, affirm that this is a (Western) man-made disaster, and thus add a different possible point of departure to the Anthropocene, as the apparent moment of invention of ‘greenhouse’ [see c.(E)7].

As I proposed elsewhere, the ‘proto-greenhouse’, then called specularium, holds a particularly ignominious place in the history of technology as the physical manifestation of dissociation, perhaps as a first ‘virtual reality’. Alongside other potential moments that mark the downward spiral of the Anthropocene, the specularium is one of the key instruments that, quite literally, make-transparent the illusory materialisation of control that leads humanity towards the current Sixth Extinction we are facing [see c.(F)]. It poignantly characterises, in all its physical translucence, for better or for worst, the messianic spectre that the Anthropocene is.


Zoë Sofia begins her text Container Technologies with:

‘Since the birth of early modern science, Nature has been imagined in the west as a Big Mother full of treasures (material, land, knowledge) to be plundered and re-sourced. Through world-spanning technological and industrial enterprise, another “Super Mother” has been created in the matrix of mobile resources. We greedy metropoles (and many others besides) want a facilitating environment that smoothly provides year-round access to seasonal foods; we want 24-hour access

138 T.J. Demos articulates these various titles by Naomi Klein, Marisol de la Cadena, and Donna Haraway, among others, to supplant the geological epoch of the Anthropocene. Against the Anthropocene (Sternberg, 2017) 54.
to hot water, gas, supermarkets, banking services, etc.; and we want technologies that help access other goods and services, such as cable TV, phones, fax, mobile phones, and e-mail (though these latter also have the effect of turning their supposed “users” into mobile resources themselves, accessible almost anywhere, any time). Yet in the midst of all this abundant supply, homelessness is rising both for humans and the non-humans whose habitats are destroyed or polluted. The spectre of resourcelessness looms ever larger on the horizon as we reach the limits of a planet that had once been imagined as an infinite container of resources, now revealed as a finite resource itself.139

Luckily, but not surprisingly, we see ensuing revisions of how ‘we metropoles’ conceptualise ‘Mother Nature’ as this endlessly fertile, giving, caring subject to dominate, extract from and master. Marisol de la Cadena also helps us clarify such misogynist conceptualisations by expanding the ways in which other societies have conceived of ‘nature’ in manners that do not play into this kind of submissive summations. For instance, de la Cadena elucidates upon terms such as Pachamama (Mother of Earth), Yakumama (Mother of All Water Beings), Sachamama (Mother of Forest), created by indigenous peoples of the Central and South American forests, who never intended to objectify nature as female (or as an object at all, for that matter), but as androgynous ‘persons’ that facilitate meaningful, transformational discourses with forest ecosystems. These persons are more convincingly referred to as ‘Sources of Life.’ Likewise, Donna Haraway further contextualizes these persons as names that signify complex nature-culture systems of temporalities and spatialities that are ‘entities-in-assemblage’, which include more-than-human, other-than-human, and inhuman worlds. This puts forth and positions a philosophy that Eduardo Viveiros de Castro refers to as a ‘perspectival multi-naturalism’ of the world, one ‘inhabited by different sorts of subjects or persons which apprehend reality from distinct points of view.’ This is not just about the intersecting dimensions of multicultural worlds (which represents its own challenges, particularly with issues of geopolitical and environmental forced migrations), but also about including careful readings of what could be thought of as multilateral worlds, sourced from pre-colonial attitudes, practices, and beliefs that imply embodied, ‘corporeal’ diverging diversities of perspective and of

They are compelling, remediating forms of conceiving life that engage living beyond the splitting objectification of nature by, and away from, ‘man’… away from the relations that constitute the process of living, of conceiving the multiplicity of environment as ‘persons’ we ought relate-to…to-survive.

Before engaging in these affirmative procedures, to foster more vivid relations and divergences, let’s traverse one of the principal backdrops to modernity. We do so to better understand how deeply embedded the attitudes that pervade the construction, perception, and experiencing of nature are. We particularly do so to sense how the greenhouse abets such modern archetype of misogynist technological frameworks, that, through the Western (historiographic) techniques for constructing natural history itself, we can then explore more carefully how to enact those alternative relations and formats of world-making.

To do so, I turn to Susan Buck-Morss essay ‘Aesthetics and Anaesthetics: Walter Benjamin’s Artwork Essay Reconsidered’. I will comment that I had an indelible urge to both cry and laugh out loud during my readings of this text, for the tragicomedic genius of Buck-Morss’ reflections. I was particularly drawn to her initial position, where she writes that

‘The story is quite incredible, really, particularly when one considers the leitmotif that runs through all of these alterations, the ground from which the “aesthetic” pushes forth in its various forms. It is the motif of autogenesis, surely one of the most persistent myths in the whole history of modernity (and of Western political thought before then, one might add). Doing one better to Virgin Birth, modern man, homo autotelus, literally produces himself, generating himself, to cite [Terry] Eagleton, “miraculously out of [his] own substance”. What seems to fascinate modern “man” about this myth is the narcissistic illusion of total control. The fact that one can imagine something that is not, is extrapolated in the fantasy that one can (re) create the world according to plan (a degree of control impossible, for example, in the creation of a living, breathing child). It is the

Adamson, Joni, and Juan Carlos Galeano, “Why Bears, Yakumama (Mother of All Waters), and Other Transformational Beings Are (Still) Good to Think’ (Humanities for the Environment. Ecocentricism and Indigenous Studies, edited by Salma Monani, Routledge 2016) 226.
fairy-tale promise that wishes are granted — without the fairy tale’s wisdom that the consequences can be disastrous. It must be added that this myth of creative imagination has had salutary effects, as it is entwined with the idea of freedom in Western history. For that reason (an excellent reason), it has been staunchly defended and highly praised. Yet present feminist consciousness in scholarship has revealed how fearful of the biological power of women this mythic construct can be. The truly autogenetic being is entirely self-contained. If it has any body at all, it must be one impervious to the senses, hence safe from external control. Its potency is in its lack of corporeal response.”

What Buck-Morss begins to set-up here is the uncovering of the recalcitrant, if pathetic immaturity (I won’t say ‘childish’ because that would be a disavour to children) that burgeons through modernity to become the overarching, anaesthetising technology, as the invisibly embedded framework laying concealed under the very foundations of Western political thought. It is a framework that, among other consequences, results in the eventual discretisation of aesthetics as a something ‘unworthy of philosophers’ — i.e., a modern reversal of aesthetics from being something inherent to sensible experience, to becoming something assigned to cultural form, from the real to the illusory, from the empirical to the imaginary. The context of her elucidation is rooted in a committed analysis of Walter Benjamin’s general body of work, one that in large part responded to the rise of populist fascism in Europe in the 1920s and ‘30s.

‘Benjamin is saying that sensory alienation lies at the source of the aestheticization of politics, which fascism does not create, but merely “manages” (betreibt). We are to assume that both alienation and aestheticized politics as the sensual conditions of how modernity outlives fascism — and thus so does the enjoyment taken in viewing our own destruction. The Communist response to this crisis is to “politicize art”, implying — what? Surely Benjamin must mean more than merely to make culture a vehicle of Communist propaganda. He is demanding of art a task far more difficult — that is, to undo the alienation

of the corporeal sensorium, to restore the instinctual power of
the human bodily senses for the sake of humanity’s self-pres-
ervation, and to do this, not by avoiding the new technologies, but
by passing through them.’ 142

The grounding that Buck-Morss performs in order to associate the
sensory-amputating alienation that modernity constructs with the
fascist ‘management’ that ensues is perhaps best exemplified by her own
citation of Kant’s Critique of Judgement in regards to the ‘sublime’. Kant’s
notion of nature’s menacing nature, which is drenched in his own ideal
of autogenesis, is to be negotiated initially by responding with fear, lead-
ing to a yearning for self-preservation… that our ‘senses’ tell us that
we are powerless against nature’s might. But Buck-Morss clarifies that
then he offers a different, more “sensible”(!) standard’ that we acquire
when viewing the awesome power of nature from a ‘safe’ place, where
nature’s power is small and our ‘superiority’ is immense. In Kant’s own
words, which, to me, manifest as a mild psychotic – if not sociopathic –
episode, he states that:

‘Though the irresistibility of nature’s might makes us, natural beings,
recognize our physical impotence, it reveals in us at the same time an
ability to judge ourselves independent of nature, and reveals in us a
superiority over nature that is the basis of a self-preservation quite
different in kind…’ 143

As much as Buck-Morss compellingly articulates the figure of the
enlightened man as being self-absorbed in his autogenetic, ‘autoerotic’
compulsion, she is careful not to make an un-nuanced statement about
the male figure in her critique: ‘indeed, homoerotic sensuality may have been
even more threatening to the emerging modernist psyche than the reproductive
sexuality of women’. And this is important, for the self-abstraction of the
male as a figure of compulsion towards dissociation from, and domina-
tion of, nature is not a homophilic tendency. The penchant for the manly
de-sensing of human experience is rooted in a fear of ‘feeling’, one
presented as the threat to modernist psyche, requiring the severance,

the amputation of ‘sensibility’. It becomes the manner in which to attain an autonomy, an ‘objective’ perspective, as the enlightened morality that is devoid of ‘objective’ sense, the moral (perhaps even scientific) being as one that is sense-dead. ‘Again, Kant’s ideal is autogenesis. The moral will, cleansed of any contamination by the senses (which, in the First Critique, are the source of all cognition), sets up its own rule as a universal norm. Reason produces itself in Kant’s morality — the most “sublimely” — when one’s own life is sacrificed to the idea.’

Buck-Morss traces this line of reason — one that ends by justifying the ‘warrior’ over and above any other social figure — with what Heidegger recalls as Nietzsche’s Mannesaesthetik, as the replacement of what Nietzsche called Weibesaesthetik, or the ‘female aesthetics’ of receptivity to sensations from the ‘outside’ world. As Buck-Morss herself says, one could go on documenting this entertaining, ‘often truly silly fantasy’ of all-male self-reproduction as the magic art of creation ex nihilo. But let’s just say that this material substantiates her ensuing exposition of Walter Benjamin, initially by way of his essay ‘The Work of Art in the Age of its Technological Reproducibility’ (1936), as well as by his opus Das Passagen-Werk (Mit Bindestrich und Werk mit Capital W), posthumously titled The Arcades Project (1927-1940/1999). The Arcades become the ultimate expression of Benjamin’s ecology of ‘indirect’ discursive methods that trace, and may even may offer hints for how we may re-mediate, the ‘shocks’ pressed upon the human sensorium. We will walk along, and even climb down to the heights of modernity, aided by Buck-Morss, as well as by Howard Eiland, Simon Cooper, Jonathan Crary, and Rebecca Comay, to better perceive the dialectical contrasts that Benjamin proposed [see Exegesis], to sense what has been at the root of the transparent and complex forms of dissociation today.

[Auratic] Experience

Allow me to briefly anchor our walk by offering a more specific definition of the word ‘experience’, recognizing that the use of ‘experience’ as a place-holder for a universal perception, as an unquestionable
common sensation, of insight and/or of knowledge as fact, is, without question, obsolete. Joan W. Scott’s landmark paper titled *The Evidence of Experience*, exposes us to such difficulties with both jarring precision and manifold perspectives. She deploys an enduring critique of normative history in terms of conventional historical understandings of ‘evidence’ by way of a reading of Samuel R. Delany’s *The Motion of Light in Water: Sex and Science Fiction Writing in the East Village, 1957-1965* (1988). She instantiates this particular work, for it exposes and contraposes the crisis of orthodox history, by reminding us that histories are written from fundamentally different, often irreconcilable perspectives that are saturated with omissions of Others, where none is ever complete or completely ‘true’. For Scott, Delany’s autobiography

‘...provide[s] evidence for a world of alternative values and practices whose existence gives the lie to hegemonic constructions of social worlds — whether these constructions vaunt the political superiority of white men, the coherence and unity of selves, the naturalness of heterosexual monogamy, or the inevitability of scientific progress and economic development. [W]hen experience is taken as the origin of knowledge, the vision of the individual subject (the person who had the experience or the historian who recounts it) becomes the bedrock of evidence on which explanation is built. Questions about the constructed nature of experience, about how subjects are constituted as different in the first place, about how one’s vision is structured — about language (or discourse) and history — are left aside. The evidence of experience then becomes evidence for the fact of difference, rather than a way of exploring how difference is established, how it operates, how and in what ways it constitutes subjects who see and act in the world.’

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I plainly admit that responding to such an important and affirmative set of cautions and potentials is difficult for me. Surely, the reproduction and transmission of my experience — and that of those who I collaborate with, who may read my texts, and/or visit my exhibitions — as factual material for the construction of history is, well, absurd. It is clear to me that the methods I here employ, as research and experimentation, will

often fail to wholly reflect a processual analysis of how artwork may or may not be producing any experience or knowledge (even to the extent that I may not even be interested in producing either ‘applicable’ or ‘acknowledgeable’ outcomes at all). But I have aimed, and continue to aim, to treat ‘experience’ not as an origin, but as an exploration of the challenges imposed upon ‘experience’ itself (even as an absence) which I aim to differentiate and dis-play.\textsuperscript{145} Furthermore, I feel that such a rigorous expectation must acknowledge both the virtues and the challenges of visibility and invisibility, all beyond the conventional idea of ‘experience’ as mere audio-visual means that may include smell, touch, and taste. Therefore, if this exploration before you has any spirit – which I see as an aura dispersed positionally beyond the limits of the liminal or the interstitial – it is to assert that I am attempting to concatenate, not a universally applicable formalism of experience as resource-material, but of environmental forms specific to the social potentials for “situated knowledges”\textsuperscript{146} [see c.(D)].

For the moment, let me reaffirm that my effort to historicise ‘greenhouse’ as precisely the quintessential, dissociative splitting of our psycho-social relation with environment is not to offer a formulated, crystallised, reified ideal of what ‘greenhouse’ may mean to you, in your experience. I precisely explore the opposite: my attempt is to shake and deposite the privileged role greenhouse occupies as an assumed form of civic experience, questioning its role in the dissociation of our common environmental discourses. I do so to ask, with careful fervour, individually or with shared perspectives inclusive of human-non-human perceptions: why is the patriarchal and illusory severance from the natural and the sensible so toxic; why do we continue to walk anaesthetised towards a much more difficult future? I do believe that as you and I continue forth traversing beyond these Breathtaking Greenhouses, through the works and investigations that make this reflection perceptible, we will, instead of a toxic destiny, encounter other options and potentialities for


\textsuperscript{146} “Objectivity turns out to be about particular and specific embodiment, and definitely not about the false vision promising transcendence of all limits and response-ability […] Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting the of subject and object.” – see Haraway, Donna Jeanne. \textit{Simians, Cyborgs, and Women: The Reinvention of Nature} (Reprinted, Free Association Books, 1998) 190.
'living’ experiences.

To make possible those encounters, let’s then offer that ‘anchor’, as a differential notion for living experiences. To do so, we return to Susan Buck-Morss as she offers a materialist, *neuroaesthetic* assertion about how we may position ourselves *in relation to* experience, and/or its absence, from the sensory amplitude that is the living environment. She argues that:

> ‘The nervous system is not contained within the body’s limits. The circuit from sense-perception to motor response begins and ends in the world. The brain is thus not an isolable anatomical body, but part of a system that passes through the person and her or his (culturally specific, historically transient) environment… The field of the sensory circuit thus corresponds to that of “experience,” in the classical philosophical sense of a mediation of subject and object, and yet its very composition makes the so-called split between subject and object (which was the constant plague of classical philosophy) simply irrelevant. In order to differentiate our description from the more limited, traditional conception of the human nervous system which artificially isolates human biology from its environment, we will call this aesthetic system of sense-consciousness, decentred from the classical subject, wherein external sense-perceptions come together with the internal images of memory and anticipation, the “synaesthetic system.”’

The ‘simply irrelevant’ mediation and composition of the classical split and correspondence between object and subject offer us the ‘syn-aesthetic system’ as a decentralised commonality that fundamentally challenges ‘experience’ as a singular object. If for no other reason, that is because the nervous system we share is “open” in the most extreme of ways. As Buck-Morss describes, and as neuroscientist Ramachandran corroborates [discussed in the work of Kader Attia, see c.(A)₂], our nervous systems are not only open to our worlds through our sensory organs, but the nerve cells, and even the mapping of our own bodies – of our own self-image – is a networked ‘image’ that is discontinuously

whole. In other words, this is not a metaphorical assertion.

For instance, our nerve cells reach toward, but never touch, other nerve cells, only to pass ‘leaky’ electrochemical charges through the fatty space between them, now commonly called myelin. Furthermore, in Ramachandran’s process of finding non-pharmaceutical, therapeutic cure to the ailments of ‘phantom pain’, he has realised that the mass-regions of our brains that ‘manage’ the different sensory areas and functions of our bodies are not analogous to the continuous 3-D mapping we have ourselves of our bodies. Namely, in the specific case that led Ramachandran to this finding, the patient, while touching the left side of his face, would ‘feel’ sensation ‘on’ his missing, right forearm. This means that the area of the brain that manages the left side of the face, and the one that manages the right forearm, while not next to each other on our body, are indeed next to each other within the brain. This disparity of discontinuous interconnectedness between bodyspace and neural mapping, and of the leaky, open nature of our nervous systems, offers us, quite literally, an embodied metaphor about how ‘experience’ is delivered. Dare I say that our experience of social human-non-human relations seems hardly a binary construction process that operates beyond the limits of the bi-cameral, left/right hemispheres of the brain. It seems quite obvious that the potential for a more comprehensive, synaesthetic series for living experiences is, at best, a triadic one that offers a fluctuating morphology where ‘perceptual distance’ is attained between physical proximity, sensorial continuity, and neural discontinuous interconnectivity.

That loose triad seems to resonate with Benjamin’s neurological understanding of modern experience as one centred on ‘shock’. Buck-Morss indicates that Benjamin relies on the Freudian insight that consciousness is there to protect us, to ‘shield’ us from ‘excessive energies’ by preventing their retention as memory, and thus from becoming trauma. Buck-Morss provides us with the construction of a synaesthetic system, as a more comprehensive, relational cosmos of nerves, matter, and thoughts, precisely to challenge and polemicize the assumptions and omissions that construct modern experience. Of course, Buck-Morss is surely not the only one that takes on the revision, and historicising, of Benjamin’s sense of modern experience [see also Rebecca Comay,
Jacques Derrida, Giorgio Agamben, Howard Eiland, Bernard Stiegler, et al. see c.(A)]. But what makes her purview important is the way in which she problematizes the calculated severance of the sensorium from those excessive energies as a manner in which the European social body becomes instrumentalised. This is of course delivered in the form of new, industrial modes of disrupting perception, where perception is, quite literally, severed and anaesthetised from reality.

That industrial technological transfer specific to the mid to late 1800s was a bizarre whirlwind of culture, science, and innovation that seems to have even exceeded the pace seen in the late 20th century. Iron and glass, steam engines, photography, telegraph, radio, and pharmaceuticals – soon followed by cars, airplanes, cinema, and the telephone – all occurred within a span of about 80 years. It was amidst that whirlwind, particularly for European and the burgeoning North American societies, which were often drawing indiscriminately on their colonial bounty, that these societies began to generate modes of ‘shielding’ themselves from the impacts of those stormy shocks. As Buck-Morss indicates, from the autogenetic patriarchy of de-sensing man from aesthetics, as response to this technological evolution from the theocentric to the anthropological, we see the emergence of a ‘technics’ as anaesthetics.

Early on, anaesthetics meant, of course, the removal of pain for surgical procedures. But it quickly led to the medicalisation and mediatisation of nervous ailments. One disease stood out in 1869, publicised as ‘neurasthenia’ and diagnosed as a pathological disease. Its symptoms were precisely described as the incapacity for ‘experience’... ‘precisely as in Benjamin’s account of shock,’ where the dominant metaphors for the symptoms were ‘shattered nerves’, ‘nervous breakdown,’ ‘going to pieces,’ and the ‘fragmentation of the psyche.’

Buck-Morss draws from such scientific development as German chemists Friedrich Sertürner’s and Friedrich Gädcke’s turning South-Asian opium into morphine and South American coca into cocaine, respectively (both in the early 1800’s), an analysis of how the unregulated, medicalised sale and abuse of these indigenous ‘biotic’ substances-turned-pharmaceuticals grew widespread. A penchant for (even

rampant attitude towards) medicating life became so casual – affecting all social strata, from the poor to the aristocracy, including the very scientists and doctors who produced and prescribed them, as well as Freud himself in later years – that even mothers working in factories were given opiates with which to drug their children as a form of day-care. It was during that time that the daydream of the reverie and the nightmare of addiction rapidly evolve into a default condition of judgement, an (an)aesthetics driving a mass, illusory, insidious condition that began to turn the modern perception of reality into a narcotic itself.

Buck-Morss argues that the construction of that narcotic, analogous to the pharmaceutical kind, is the unchecked emergence of the technoscientific apparatus. The chief ‘technoaesthetic’ (or perhaps technoanaesthetic) name for this analogous numbing narcotic effect is the phantasmagoria. What was initially a 17th-century necromantic effect for calling and conjuring ghosts, mostly in the context of séances, became a mechanical show of lights and early kinds of projectors for horror theatre, which was in no small measure the immediate precursor to cinema. The phantasmagoric capacity for delivering shocking effects was thereon expanded to become the namesake of a broader social perceptual phenomenon of modernity, formulated from the unforeseen forms of fetishism and alienation, whose social surface-medium is referred to as aura.

Now, aura is often considered to be a glow, a ‘ghostly’ quality, or barely perceptible energy that envelops a person or an object. That radiating glow often splits as either a persuasive seductiveness or a discomforting sensation, and is not just visual, but also olfactory and tactile, as smells, hums, and vibes are emitted by the entity that is being perceived. But more specific to the matter of perception and authenticity, Benjamin thinks of aura as a ‘strange tissue’ (‘Einmalige Erscheinung einer Ferne so nah sie sein mag’) that interweaves the space and time of what is near and far. It is ‘the unique apparition of a distance however near it may be. To follow with the eye a mountain range on the horizon, or a branch that casts its shadow on the beholder, is to breath the aura of those mountains, of that branch.’

with reference to historical objects, may be usefully illustrated with reference to the aura of natural ones. We define the aura of nature as the unique phenomenon of distance, however close it may be.\textsuperscript{150} For Benjamin, that sense of ‘distance’ that equates historical and natural aura is that which becomes decisive for perceiving what he refers to as ‘authentic experience’ – of life, of history, of art, of being.

Conversely, for Benjamin, aura is also intrinsic to technology, as technological aura occurs through ‘immature’ instrumentalisation, where society fails to ‘make technology its organ’\textsuperscript{151}. Buck-Morss already identifies such immature instrumentalisation as the ‘prosthetics’ of society. Specifically to aura, as prosthetic, it manifest as the mechanical ‘surface unity’ that reflects and covers over the fragmentation of reality delivering the inauthentic, protective, compensatory illusion for the phantasmagoria to take place broadly, transparently. That theatrical, mechanical effect for ‘horror’ grows and ‘doubles back in the form of illusion, taking over the role of the ego in order to provide defensive insulation.’\textsuperscript{152} That doubling back – say, as a type of double-bind, of illusion and of insulation – is portrayed by Ernst Jünger as the ‘great mirror’ of technology that, from its reflection, returns to us an image that is ‘displaced’ onto that different plane of surface-unity. The technological aura is thus that which displaces perceptual ‘distance’, leading to the seeing of oneself as a physical body dissociated from sensory vulnerability. We construct not an ‘authentic’ sensory experience that proportionately places us within the environment, but instead one that detaches us into what is constructed as an interior ‘virtual body’, and which is contrary to the irreality function of imagination; it is a sensory experience that can instead ignore and deflect the shocks of modernity through apathy by obfuscating pain. That lack of ‘authentic experience’ – of life, of history, of art, of being – is akin to a ‘decay’, to an entropy that fragments interrelations, resulting from the insistent bombardment that is perpetrated by the nascent industrial excesses producing the aforementioned ‘shocks’. And it is the entropy of aura that, for Benjamin, allows us to grasp the proportional social decay between nature and history.

\textsuperscript{151} ibid., Benjamin 1936/2006, 3:121.
\textsuperscript{152} ibid. Buck-Morss 1992, 33.
In order to recognise, let alone move along and transform, the ‘compensatory’ dysfunction of technological aura and its concealing surface-unity as phantasmagoria, it seems necessary to also anchor, at least provisionally, what ‘authenticity’ may mean, as we will lead up to it a few more times. Notwithstanding Benjamin’s profound and warranted concerns about, and aversion to, authenticity, I would like not to walk entirely away from our current walk (Spaziergang) to fully extrapolate Benjamin’s notions of ‘origin’ and its relation to ‘authenticity’. This is to say that I am not concerned here with asserting ‘authenticity’ as that which reifies experience into a standard, or original, object of reality, as an ‘original’ versus a ‘copy’, or of fact versus fiction. Nor am I interested in removing the possibility of ‘authenticity’ altogether. I just would like to take a chance to reposition authenticity as a political potential for art that may allow us to share common yet diverging sensations, particularly of the environmental kind, that are not to be wholly mediated through technoscientific ideology. To do so, I consider Benjamin’s concern over what he calls the ‘unconscious ruse’ of ‘second technology’ when stating that –

‘Compared to that of the machine age, [prehistoric technology] was undeveloped. But from a dialectical standpoint, the disparity is unimportant. What matters is the way the orientation and aims of that technology differ from ours. Whereas [first, prehistoric technology, in fusion with ritual] made the maximum possible use of human beings, [second, machinic technology] reduces their use to a minimum. The achievements of the first technology might be said to culminate in human sacrifice; those of the second, in the remote-controlled aircraft which needs no human crew. The results of the former are valid once and for all (it deals with irreparable lapse or sacrificial death, which holds good for eternity). The results of the latter are wholly provisional (it operates by means of experiments and endlessly varied test procedures). The origin of the second technology lies at the point where, by an unconscious ruse, human beings first began to distance themselves from nature. It depends, in other words, on play.’

Playing off that ruse may yield multiple perspectives, not from the point of ‘origin’, but through the display, or, say, an act of ‘dis-play’. Embracing the ruse, not as a self-deceptive form of distraction, but as a form of productive attention, is what precisely may be engendered to gain authenticity, however provisional it may be. For instance, I here write a response to Benjamin, precisely not as an act of exhibiting, but as a display. I paraphrase and amplify his own fourth axiom (IV)\textsuperscript{154} in the ‘The Work of Art…’ essay:

\begin{quote}
The modes of perception of human collectives change over long periods. Our modes of perception are not the object of interior self-image nor the commodifiable object-outcome. Now more than ever (considering the challenges of digitalisation and social media which you and I will soon here visit), the potentials for common modes of aura may become the medium in which perception — reconceived as shared human-non-human auras — is organized (as organs) and differentiated (as divergences) by nature and by history in the face of the messianic march towards Global Warming.
\end{quote}

I display this ‘paraphrasing’ as a small sample for reclaiming authenticity as an auratic medium for living, one that may channel and conjure unforeseen ‘paranormal’ and ‘parametric’ communications and activities for accurately perceiving the ‘paralogical validity’ of future spectres [see c.(D)\textsubscript{3}].\textsuperscript{155}

\footnotesize
\begin{itemize}
\item \textsuperscript{154} ibid. Benjamin 1936/2006, 3:104.
\item \textsuperscript{155} ‘Membership can be described as the processes of managing the tensions between naturalisation on the one hand (as routines and conventions of “transparency”), and the degree of openness to immigration on the other. Communities vary in their tastes for openness. Cults, for example, are one sort of collective which is low on the openness dimension and correspondingly high on the naturalisation/positivism dimension — us vs. them. The paradoxes of multiplicity (as paralogical validity) may be resolved by closing or opening the world. If one chooses an open model, then the combination of multiplicity, the links between partial perspectives, becomes the problematic.’ - Star, Susan Leigh. ‘Misplaced Concretism and Concrete Situations: Feminism, Method and Information Technology’. Boundary Objects and beyond: Working with Leigh Star (edited by Geoffrey C. Bowker et al., The MIT Press, 2015, pp. 143–67) 155.
\end{itemize}
The Theatre of the Arcades

I take license in paraphrasing Benjamin's ‘The Work of Art...’ essay because his own paradoxical, and even contradictory, positionings require, at times, to be held and deposed as well. That is the space and pleasure that Benjamin provides, particularly with material that seems to transgress and revive as afterlives, such as the statement at the conclusion of said essay, which resonates as clearly as if it were written today. But the contrast between the technological and natural/historical auras of Benjamin do portray an ambiguity and intransigence that calls for that further inquiry. Simon Cooper interprets from the *Arcades Project* that:

‘if the experience of mechanised labour and the shocks of modern urban existence cause life to be lived on a fragmented, superficial level, then the phantasmagoria renders such surface experience into a state of illusory plenitude. While technological change produces an experience of shock, it also comes to provide a compensatory mechanism, that of the phantasmagoria, which functions as the dialectical other of the factory. Benjamin [from Marx] defines the phantasmagoria as an appearance, an illusion, which deceives the senses through their technical manipulation. He notes how the increase of technology increases the potential for phantasmagoric effects. In the *Arcades*, Benjamin describes the spread of phantasmagoric forms into public space where totally simulated environments, such as the glass and marble arcades, as prototypes of the shopping mall, come into existence. It is here that “the role of traditional art as a sensual experience that differs from reality becomes difficult to sustain.”'\textsuperscript{156}

The arcades – as the *en masse* cover-structure of pedestrian streets with iron and glass – began to appear in Paris by the early 1800s. At this
point, the industrial development of iron and glass construction was heavily influencing both the physical and mental nomenclature of the city. One overarching term that pervaded these worlds, mainly in terms of urban development and socioeconomic discourse, was ‘superstructure’.

On one hand, the ‘arcades’ became the preeminent ‘superstructure’, sustained by the buildings and suspended over the streets of the city to shield people from the threats of weather and of nature, to facilitate commerce and leisure. On the other hand, superstructure became the binary couple to the ‘base’ of Karl Marx’s archetypal economic model of civil-political relations. First mentioned in his 1859 preface to A Contribution to the Critique of Political Economy, Marx claims that the superstructure (Überbau) – as the overhanging legal and political, cultural and institutional manifestation of society – emerges from its bottom ‘base’ (Basis) as the civil relations that empower production, between material-natural and human-labour relations [see c.(F)]. Both carry the ‘superstructure’ namesake, and both rely on an endless and scaleless abstraction, as a binary over another binary. The arcades seemed to cover the city endlessly. The economic model seemed to cover its economy scalelessly. In no small measure, the binary relation of forces manifest from base to superstructure, and vice-versa, physically and metaphorically. Both notions, of the Parisian arcade, and of the economic model, superimpose one another. Such superimposition of one over another meets at the point where – at the most fundamental level – the glassy, transparent impasse begins. In their duplicity, they seamlessly cancel out living, dissociating humanity from the environment, as though both the ‘arcade as superstructure’ and ‘the economic model as superstructure’ become scaleless, reductive misrepresentations of the nature of our relations to, and of our actual interdependency with, the environment: the ultimate phantasmagoric effect.

I venture to speculate, given that Marx was in London at the time, that he may have been inspired to develop his binary economic model using ‘superstructure’ as its top-side namesake (as opposed to its under-side ‘base’) because of the prominence of Crystal Palace [see c.(A) & c.(C)] and the collective colonial-industrial climax it projected. Designed and built by Joseph Paxton, an autodidact gardener-cum-master-engineer, Crystal Palace was conceived from the experimental greenhouses he
had been producing at Chatsworth, the famed grounds of the Duke of Devonshire, where he both lived and worked as groundskeeper. The untested design, as a temporary structure, was made hastily for the competition of 1850, with the first World’s Fair, or the then called Great Exhibition, to take place already the in 1851.\footnote{Colquhoun, Kate. \textit{A Thing in Disguise: The Visionary Life of Joseph Paxton} (Harper Perennial, 2004) 167.} The 17-acre, 150-foot-tall steel and glass behemoth must have been on Marx’s (and Engels’) mind. It must have physically exemplified the forces and relations, the violence and the facile reflex for exploitation, as the blasé spirit of the age, in a manner that must have, at the time, seemed physically endless and scaleless. As an externalisation of the physical and mental manifestation of the \textit{superstructure}, as a division between human and nature, resources and economy, letting in the comfort of sunlight and providing cover from rain and snow – first over the streets of the city, and then over all of nature itself – the Parisian arcades, and then Crystal Palace, were a singular, scale-less phenomenon. Their singular and transposable form of steel and glass endlessly and scalelessly camouflaged the environment, becoming both prototype and paradigm for framing and driving the popular penchant for consumerist obsession as the \textit{commodity fetish}.

The arcade and Crystal Palace are themselves manifests of the burgeoning, large-scale, transparent ‘ease’ of industrial re-production, ultimately becoming the embodiment of a transparency, a \textit{naturalisation} created by rampant ubiquity. More importantly, what the effect of that naturalised ‘transparency’ seems to most effectively deliver is the dissociation from the forces of resource \textit{and} labour extraction, from what embodies the production, or rather, the ‘material economy’, of the consumer object. That seeming transparent effect, as a contradictory metaphor to the transparency of the arcades, and of Crystal Palace – of the human capacity to dissociate itself from the reality of forces, forms, and relations to the environment and to the Other – is the driving force hidden behind the most toxic export of the modern age: the illusory interior/ exterior binary. From the earliest versions of his Exposés for the \textit{Passagen-Werk}, from 1927, when he worked with Franz Hessel, to the 1935 version for the Institute of Social Research in New York, and to the very last French version of 1939 (all which changed significantly
through each iteration), Benjamin would consistently cite one generic source referred to in his ‘materials’ as the *Illustrated Guide to Paris: a complete picture of the city on the Seine and its environs from the year 1852*:

> ‘These arcades, a recent invention of industrial luxury, are glass-roofed, marble-panelled corridors extending through whole blocks of buildings, whose owners have joined together for such enterprises. Lining both sides of the arcade, which gets its light from above, are the most elegant shops, so that the passage is a city, a world in miniature in which customers will find everything they need. During sudden rainshowers, the arcades are a place of refuge for the unprepared, to whom they offer a secure, if restricted, promenade – one from which the merchants also benefit.’

The citation of course is put forth as a suspicious vector about how the arcade, as a superstructure, is overtly conceived to capitalise upon the refuge of the ‘unprepared’. But more poignantly, it is the way this passage points to the scaleless reduction of the world, one that the *passage* performs, as a miniature world that provides endless access to consumption. The transfer of both of these vectors onto the powerful act of ‘exhibiting’ points to the climax of modernity, wherein by the mid-to-late 1800s there already was a kind of ‘fire’ taking place in the form of ‘leisurely’ excesses – of political and gendered upheaval, as well as of drinking, drug use, gambling, and prostitution – leading many arcades to lose their glamour and become ‘unsavoury’ urban spaces, at least from the perspective of city administrators and the bourgeoisie. By the 1870s, during the Hausmann renovation of Paris, the majority of arcades were dismantled and demolished, leaving only a few that remain to this day. It is that rise and decline of the arcades, and their genealogical relation to Crystal Palace, that fascinated Benjamin, for all that it reflected and signified. It is with the *Arcades Project* that Benjamin corrals the *Passagen*, the arcades, the glass palaces, as a massive *superstructural* object of analysis, as multidimensional and translucent laboratory that would exceed our cone of vision while simultaneously offering multiple perspectives as a ‘magical encyclopaedia’. It simultaneously worked as

a space for testing, and as a support structure to display the results of such tests.

As discussed with Arcades Project translator and Benjamin scholar Howard Eiland through our interview, together with artist Patrizia Bach, titled Methods of Indirection [(2019), see c.(G)], Benjamin collapsed his entire scope of critical research into the Parisian arcade (and, to a lesser but still critical degree, the Crystal Palace), treating it as a vast object of historical and technological analysis and display for art. This ‘historiographic treatment’ became the Passagen-Werk, something he and Hessel originally conceived of together as per the Exposé of 1927. After the two became unable to continue to produce the work together, Benjamin carried on working alone over the succeeding decade until he was interrupted in 1940, when his lonely and sometimes desperate seven-year exile in Paris came to an end with his suicide at the Spanish border. In a 1930 letter, Benjamin deemed the Arcades to be – as his work of passages, and perhaps his rite of passage – ‘the theatre of all my struggles and all my ideas’. It had become for him, as it has become for us, both a social and literary laboratory and a platform for staging and enacting such dis-plays [see Exegesis].

It is the ‘superstructural’ quality of the arcades – applicable to all the glass palaces of the epoch, in their breadth and ubiquity – that gave them the singular, stage-like quality that allowed them to operate as ambulant, transplantable theatres to challenge interiority. Their glass and marble materialities offered the potent effects of translucency and transparency that Benjamin found to be not a deformable ‘reflection’, as Marx would argue, but a direct ‘expression’ of the social base of modernity: the arcades are the implicit subconscious expression, and, I would say, the eventual technological physicalising of the enframing itself [Gestell, see c.(A)], of the collapsing phenomena between the (anaesthetised) consumer and the fetishized, (anaesthetising) object of consumption. Therefore, that quality of ‘superstructure’ was objectified to the point where Benjamin would use it, for better or for worse, to differentiate himself from, or even reject, Marxian aesthetic theory.

by using Marx’s own words. As Rolf Tiedemann explains, “the majority of Marxist art theorists explain culture as the mere reflection of economic development; Benjamin refused to join them. He viewed the doctrine of aesthetic reflection as already undercut by Marx’s remark “that the ideologies of the superstructure reflect relations in a false and distorted manner.” 160

Through that differentiation, we can tell how Benjamin, by toggling back and forth between his own signature of dialectical form of detours and indirections, delivers a form of Physiognomics that he would consider to be not necessarily an outright rejection of, but a critical extension or supplement to, Marx’s mode of historical materialism. As a study of reading ‘facial expression’, his Physiognomics are scaled-up from people’s faces to the very surfaces and facades of the city, looking to ‘see’ the superstructure not as a materially deformable ‘reflection’ off of a mirror effect, but as a direct, emotional and embodied ‘expression’ of the ‘base’. They both contain and facilitate the ‘signatures’ – the actual innerworkings of culture – by ‘inferring the interior from the exterior’, however illusory or real they may be. In an early draft-version of Benjamin’s Exposé of 1935, he entertains his distancing from Marx by questioning the Marxian nature of the superstructure through his Physiognomics:

‘Corresponding to the form of the new means of production, which in the beginning is still ruled by the form of the old (Marx), are, in the social superstructure, the wish images in which the new and the old interpenetrate [hineinwirkt, Durchdringung] in fantastic fashion.

[...] The reflections of the base by the superstructure are inadequate, not because they will have been consciously falsified by the ideologues of the ruling class, but because the new, in order to take the form of an image, constantly unites its elements with those of the classless society.

[...] The collective unconscious has a greater share in them than the consciousness of the collective. From the former
come the images of utopia that have left their trace in a thousand configurations of life, from buildings to fashions. These relations are discernible in the utopia conceived by Fourier…

[…] And the experiences of such a society – as stored in the unconscious of the collective – {never come to rest on the threshold of the most ancient cultures, but take up elements of natural history into their movement. This movement} engenders, in combination with what is new, the utopia that has left its trace in a thousand configurations of life, from enduring edifices to passing fashions. 161

We are not here to parse the correctness or worthiness of either Marx’s ‘reflection’ or Benjamin’s ‘expression’ of the superstructure as a general critique of ideology. Instead, we are here to consider how both of their forms of analysis, in hindsight, further reify the utter insufficiency of the interior | exterior binary as dissociative effect. Indeed, the nuance between reflection and expression are of critical importance, but it seems far more pertinent how both are vulnerable – by their own admission – to either deformation and/or deceit, to anomalous deflection of an image by the ideologically shaped mirror of the ruling class, or by the power of the ‘poker-face’ of privilege that can withhold from expressing reality to the sub-ordinate classless society. Neither a dependency on the reflective precision of the Superstructure, nor the precision of a Physiognomic analysis of its surfaces, have been able to elucidate the out-of-scale modern, industrial drive towards an anthropological self-image of control over nature that at once ruptures and detaches us away from nature. Neither a reflexive nor expressive analysis of the superstructure’s interior | exterior binary (cancelled out by each own’s mirroring transparencies) can project what has become of the illusory control of nature…which is now, ironically and contradictorily, completely out of control. This is evident particularly on, yes, the very construction of history as past, and on the ability (as the irreality function) to project a living future. But more importantly, it is the potential to present a present, one that is proportional to the limits of natural resources, ecosystem services, and standing reserves. Such de-formed re-

flections projected by the ruling class, of de-sensed expressions figured unconsciously by the so-called classless society, give us a conception of nature that is deeply flawed and is fundamentally made-illusory by the very ways in which natural history is still determined by the parallel, industrial development of science and technology; with its little autogenic man as its own centrally objectified, privileged observer.

Through Howard Eiland’s own writings, for instance, in Reality as Palimpsest (2016), and in his recent translation of Benjamin’s Origin of the German Trauerspiel (2019), we can sense that Benjamin, and Marx by extension, foresaw that state of ambiguity and contradiction as a challenge of overwhelming perceptual scale. The superstructure is objectified as the master medium of the ‘wish image’ – again, as ultimate form of phantasmagoria to Benjamin, and as commodity fetishism to Marx – withholding pervasively, transparently, illusorily, all the power of society. Both Marx and Benjamin were aggressive in exercising the superstructure’s complex forms and figures of manifestation. But it was Benjamin that sought to give the superstructure an embodiment as metaphorical abstraction and physical representation through the Passagen-Werk: in all and at once as the arcades & Arcades: the (a-A)rcades as building and analytical technology for modern perception; the (a-A)rcades as superstructural palimpsest and reflexive montage for containing the layering of modern experience; and the (a-A)rcades as theatre and laboratory for his intellectual explorations.

The latter quality, of the Arcades operating as theatre and laboratory, is not incidental nor consequential to the superstructural function of the arcades. He recognises, as commerce leans on the arcade’s illusory reduction of life to a miniature world, that it serves an objectifiable, scientific purpose for social analysis. The very reduction of environmental control, as an ‘externalisation’ (of memory, as hypomnemis, even as exosomatisation), has of course a principal role in scientific analysis and experimentation that offers itself genuinely as instrument and support structure — as a laboratory — for observing and testing human perception:

‘[The arcades of] Les Halles consist of two groups of pavilions joined to each other by covered lanes. It is a somewhat timid
iron structure that avoids the generous spans of Horeau and Flachat and obviously keeps to the model of the greenhouse.’
Giedion, Bauen in Frankreich, p.28. [F2a,1] 162

‘The relation of the Jugendstil interior to its predecessors comes down to the fact that the bourgeois conceals his alibi in history with a still more remote alibi in natural history (specifically in the realm of plants).’ [I7,5] 163

It is the abstraction and extraction of ‘the realm of plants’ that serves as core component to the dissociative concept of modernity, and of science over nature. It is the core reflex driving the dissociative nature of modern perception where natural history is predicated upon controlling, archiving, and constructing a toxic idea of life through the autogenetic purview of man. And here is where we find the most overt contrast, not as a conflicting contradiction, but as an affirmative paradox.

Benjamin’s deliberate manner of ‘indirection’ comes into play in his methodologies, not in his semantic narrative, but in his analytical structure, where we find that he realises a discontinuous, if dissociative default approach to deconstructing the problems of perception of history, one that provides multidimensional perspectives for observing and testing the social. What he senses is toxic in the arcades, he attempts to turn and unfold as a remediating potentiality. Through the long-term, unfinished, encyclopædic scale of his analysis, Benjamin transforms the isolative quality of the arcade, as a space that suspends ‘authentic’ perception itself as specimen, setting it unto a laboratory that also suspends memory, indeed working together to simultaneously suspend memory and perception as a type of spacetime. Such act of suspension, by transforming perceptual and mnemonic potentiality, wholly pertains to the ‘virtual’. And it is that kind of virtual space that Benjamin implements as mode and alibi, not to penetrate the present, but to ‘interpenetrate’ the past and the future, to pre-serve and pre-sent another type of potential to experience natural history as dialectic.

Based on Adorno’s comment about Benjamin ‘immers[ing] himself in reality as in a palimpsest,’ 164, Eiland explains (in his lecture *Reality as Palimpsest: Benjamin as Flâneur*) that Benjamin, ‘walked’, and looked intensely and incessantly to interpret reality as a many-layered and ambiguous script,

‘whose surface-writing partly reveals and partly conceals a virtual expanse of stratified underwritings, their spectral characters still in some measure traceable. This philological and archaeological enterprise points, I believe, to a basic characteristic of Benjamin’s way of seeing his perceptual world. It’s a way of seeing that emphasizes the vertical — and the vertiginous. And in which what is called objectivity necessitates focused immersion in the given object and its encompassing historical problematic. No doubt there are precedents for such a mode of vision, above all in the tradition of what Benjamin is fond of calling allegorical perception, rooted partly in biblical narrative and its tendency to look simultaneously backward and forward in time, thereby evoking at any given moment in the succession of narrated events a complex vertical dimension of remembrance and expectation. But Benjamin’s way of seeing is also of course specifically “modern” in its dynamic and polycentric character: to borrow a model from physics, a static atomistic mode of thought and perception that has given way to a transformational field-oriented mode, in which a certain continuous discontinuity is of the essence. The logic of linear causality is accordingly transformed in the field of force — where a principle of simultaneous concentration and expansion governs the vibration of events. Following in the tracks, first of Nietzsche and Bergson, and later, in the 1920s and 30s, of Baudelaire and Proust, Benjamin applies (if I can put it this way) a dynamic constellatory model of reality to the experience of time (spacetime, really), and to the idea of history, developing a concept of the retrospective-anticipatory historical moment as a site of the lightning flash of recognition,

the sudden emergence of what he calls “the dialectical image.” This kind of image is dialectical because it looks simultaneously backward and forward in time. In the peculiar tension of its expansive concentration, the meaning of past events is actualized — is distilled and constructed anew in confrontation with concerns of the present day. Already in 1914–1915, as a university student, Benjamin speaks of historical understanding in terms of a “focal point” of attention and remembrance, a state of being in which, what has been, becomes futural, and in which the gravity of lament for what is irretrievable and unredeemable coexists with the radiation of a messianic promise.

What Eiland is here emphasising is that Benjamin (as Jünger) argues that the ‘virtual’ condition of the arcades becomes the core quality that determines the superstructure to be made illusory by its phantasmagoric, nonlocal nature. The very absence of a ‘focal point’, reflected and deformed by transparencies and mirrors, is one where the phantasms of ‘lament’ (as romantic nostalgia) and/or ‘promise’ (of messianic salvation), later to become the spectres, are divided and amplified by fetish, while their interdependence, their symbiotic connection, is neutralised or anaesthetised, to use Buck-Morss’ depiction. Collective recollection becomes impossible to interpenetrate, neutralising ‘the theatre and medium of memory’, and thus renders the onlooker unable to perceive and/or ‘experience’ reality. Here lies the proto-technological capacity, or machinic power, of dissociation that is facilitated by ‘greenhouse’: to confuse interiority and exteriority with the past and the future by creating a virtual space — the first virtual space. The arcades, and the ensuing glass palaces ‘cease’ and draw from the greenhouse’s key effect to provide an ‘interior-as-exterior’ where man can slow down or speed up the passing of time, as an illusory mastering of the world, as the seemingly total domination of nature (the ‘true’ world picture).

It is difficult for me to determine which terms for ‘greenhouse’ Benjamin uses in his notes. But in the Eiland & McLaughlin translation of the Arcades, the word ‘greenhouse’ appears five times, in convolute passages [F2a,1]; [F4,1]; [G2a,8]; [G6;G6a,1]; [M1a,4]; [M3,10]. The word ‘hothouse’ appears eight times as well, in convolute passages [A10,3]; [D2,3]; [E13,1]; [F4a,6]; [F6a,2]; [J3a,1]; [J16,3]; [J26,2]. The terms
are basically used interchangeably and synonymously, both in literal and metaphorical senses, albeit the hothouse tends to connote a more hellish tinge.

The references range from the naïve and satirical:

‘I hear they want to roof all the streets of Paris with glass. That will make for lovely hothouses; we will live in them like melons.’ [A10,3] 165

... to the technical-descriptive:

‘The development of space by means of glass and iron had come to a standstill. / Suddenly, however, it gained new strength from a perfectly inconspicuous source. / Once again, this source was a 'house; one designed to 'shelter the needy; but it was a house neither for mortals nor for divinities, neither for hearth fires nor for inanimate goods; it was, rather, a house for plants. / The origin of all present-day architecture in iron and glass is the greenhouse.” A. G. Meyer, Eisenbauten, p. 55. | Light in the Arcades | Mirrors | The arcade is the hallmark of the world Proust depicts. Curious that, like this world, it should be bound in its origin to the existence of plants.’ [F4,1] 166

... to the infernally morbid:

‘Baudelaire's great dissatisfaction with the frontispiece designed by Bracquemond according to specifications provided by the poet, who had conceived this idea while perusing Hyacinthe Langlois' Histoire des danses macabres. Baudelaire's instructions: “A skeleton turning into a tree, with legs and ribs forming the trunk, the arms stretched out to make a cross and bursting into leaves and buds, sheltering several rows of poisonous plants in little pots, lined up as if in a gardener's hothouse.”’ [J26,2] 167

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166 ibid. Benjamin 1941/2002, 158.

(Fig.67) Scan of p.198 from The Dialectics of Seeing by Susan Buck-Morss, 1991. Source: Buck-Morss / MIT Press.
From those connotations, I’d argue that the quality of the greenhouse that Benjamin looked to make evident, as embodied by the arcade, is best articulated by Jonathan Crary. He reminds us, specifically from the *Arcades*, that the ‘public greenhouse’ is the flourishing archetype of the urban and mental constructs of modernity. The greenhouse became the potent blurring of the conscious and the subconscious, the real and the illusory, as quintessential ‘dream space – [one] that demanded ambulatory visual consumption and that provided the possibility [for reverie and the daydream], for previously unknown libidinal encounters and itineraries.’ ¹⁶⁸ Such quality is a core value that Crary resorts to when analysing the pivotal 1879 painting *Dans La Serre (In the Conservatory)* by Manet.

(Fig.68) The faces of the Guillemets in Dans la Serre by Manet (see full illustration of painting at INDEXICAL PROTOTYPE... pp. 392-3). Source Photo: Berrios-Negrón

The painting indeed takes place in a ‘conservatory’, which is a winter garden type of greenhouse that is attached to a larger, non-greenhouse building. Conservatories are called so because they traditionally house and ‘conserve’ unusual breeds of plants brought from exotic lands. Located at 70 Rue d’Amsterdam in Paris, Manet used this conservatory as his studio for about a year between 1878 and 1879. Owned by

a colleague, the painter Otto Rosen, this particular conservatory was more than a winter garden; it was a luxurious and secluded indoor living space known for eccentric and hedonistic encounters. The context it represented was overlaid with the figures of Dr. Jules Guillemet and his wife. A somewhat celebrated couple on the Parisian cultural scene, she is often, if not always, referred to as ‘Mdm. Jules Guillemet’, or even just ‘Jules Guillemet’, a confusion of the wife as property of her husband to the extent that her own name vanishes entirely. This is even evident in another portrait Manet made of her, in the same year he painted Dans la Serre, that is titled, simply, Jules Guillemet.

The painting was made to be exhibited in the Paris Salon of the same year. The Salon, which was actually held in the main iron and glass-roofed gallery of the Beaux Arts, was a biennial event of significant prestige, already having had a two hundred-year history, and was regarded as surprisingly conservative venue for Manet. In 1896 (the same year that Arrhenius proves Fourier’s theory of greenhouse effect), the German state and the Deutsche Nationalgalerie purchased Dans la Serre for their permanent collection in Berlin, and thus became the first museum worldwide to purchase a painting by Manet. It may be no coincidence that the painting already garnered an air of paternalistic power over, and detachment from, the natural world, since critics such as Charles-Marie-Georges Huysmans called the subjects ‘marvellously detached from the envelope of green surrounding them.’

The greenhouse as control instrument and container becomes a site and spatial context for the painting’s deliberate, thematic pressure of withholding and of squeezing. The phrasing of the title, ‘dans la serre’ is not just the direct use of the word serre – which means ‘greenhouse’, stemming originally from ‘a closed space’ – it may be also indirectly read or understood as ‘in the grip’, for the verb serrer means directly to ‘grip’, or to ‘tighten.’ That is to say that at the most obvious perceptual level, the very use of greenhouse as site for exotic plants, the word play of the title, and the superimposition of the names (of the husband supplanting that of the wife) is just one of the many layers of power – of misogyny, and of blasé as counterforce – that are ‘entertained’ by Manet.


Perhaps the values that have made this painting so acclaimed, no less in the present context of identity politics and global warming, are the forms and figures that reflect, express, and display the polarised interpenetration between entrapment and detachment. Such values no less play right into the complex role of dissociation that lurks still at the binary base of modern perception.

(Fig.69) Beaux-Arts Salon Conservatory, Exhibition / Salon de la Société nationale des beaux-arts de 1890. A droite:Tigresse apportant un paon à ses petits par Auguste Cain. Source: Jean-André Rixens. Public Domain.
(Fig. 70) Mdm. Guillemet. Reverie. Section of Dans la Serre.
Crary guides us through that particular complexity, softly clueing us at first, only to drop us on the edge of the abyss of perceptual analysis.

‘On the one hand, it is possible to consider that the work was an effort by Manet to secure man and woman into stable and legible positions and to “naturalise” modern femininity metonymically through the overlapping of fashion, the body, and plant life. But on the other, Manet is situating this work within a world in which those differences and positions are disrupted by a logic of exchangeability. The uncertain form of the greenhouse itself, in its disorganisation of the cultural and the natural, its collapsing of interior and exterior, of public and private, parallels other effects of derangement and destabilisation in the painting.’ 171

(Fig. 71) Dans la Serre, Stop. Caricature published in Le Journal amusant of 1879, with its satirical caption, in regards to the Salon of 1879, reading ‘an innocent young man is taken to the greenhouse by a seductive perfidy.’ Source: Public Domain.
Manet had previously used the balcony as form and shadow, as figure and as mere site, an effect to destabilise the interior | exterior binary. In *Dans la Serre*, he chose to play with blasé as figure ‘*within this compressed reversible world of the greenhouse*’\(^\text{172}\) as form. If we are to consider that *Dans la Serre* was produced specifically for the social greenhouse of the Salon, then may we also consider that Manet employs the greenhouse as technology to specifically play with the relation of social (& institutional) spaces to the guarantee of perceptual norms as a centripetal force field of synthesis — one holding together the *realist* reality against various kinds of sensory and cognitive breakdowns. It addresses the larger, novel problem of realism around 1880, when it was no longer a question of mimesis, but of a tenuous, spliced relation between perceptual synthesis and dissociation.\(^\text{173}\) The facial expression of Madame Guillemet, in what appears to be an *a priori* conscious awareness of the physiognomic imperative that Benjamin claims to occur *a posteriori*, is, on the surface, a double-sidedness of ‘fashion’ that corresponds to that split which to me registers literally as yet another double bind. Among other factors — no less her own social standing as a fixture in the Parisian arts scene — it is through her facial expression that we are exposed to a scathing challenge of the patriarchal entrapment by strenuous ambivalence of both boredom and comfort, arguably of being *anaesthetised*. Symbolically, we are compelled to deduce, or even abduct, from her *reflexive expression* the poignant form of an index, as a far more telling form of countering the modern, colonial violence. It implies a broader ambiguity that is at once between a socially normative attention to public exteriority and an inner subjective withdrawal from sense and nature. The latter points, quite literally, with both index fingers — his to hers; hers to nowhere specific other than its own largess and blissful relaxation — to an ‘inattentiveness and reverie’ that can operate indirectly, intransitively, as strategies for resistance and emancipation through dissociation.\(^\text{174}\)

\(^{172}\) ibid. Crary 2001, 104.


That seemingly irrational potential of dissociation is what plays a complex role in how modernity still undergirds perceptual processes today. The embeddedness of technology, as an illusory ‘grip’ over the uncontrollable and the natural, is what Manet deliberately and contradictorily attempts to stage, endlessly. In this sense, *Dans la Serre* is an exceptional instantiation of the dialectical image unleashing its ‘historical index’ of technology in a gendered manner that the retinal eye can never alone entirely grasp [see c.(C)]. Instead, between the lines of the painting, persistently, *interlinearly* (to use Benjamin’s term), we can translate how dissociation henceforth becomes a deconstructive quality of modern perception, and of modern life, regardless of whether either are deemed normal or pathological. Its pathological dimension drives towards the seeming anaesthetising of our ‘synaesthetic system’, the one that Buck-Morss insists is facilitated by the machinic nature of the greenhouse as the gripping phantasmagoria that *Dans la Serre* reflects. It is primarily off Madame Guillemet’s facial reverie that we in turn rely fundamentally on a suggestion of her anaesthetised emotional expression of dissociation and depersonalisation – the diametrical opposite to the paternalistic state of ‘female hysteria.’ The illusory effects of such expression form a chronic condition of partial loss of either perception or of care that not so ironically exploits the optical sense. The irony lies
in that the exploitation becomes a privileging. And in that ambiguous irony that goes back and forth superimposing privilege over exploitation is where the self-iterating force for ‘dissolving and disorganising’ the world lies.

‘Labour specialization, rationalization and integration of social functions created a techno-body of society, and it was imagined to be as insensate to pain as the individual body under general anaesthetics, so that any number of operations could be performed upon the social body without needing to concern oneself lest the patient-society itself...What happened to perception under these circumstances was a tripartite splitting of experience into agency (the operating surgeon), the object as hyle (the docile body of the patient), and the observer (who perceives an accomplished result). These were positional differences, not ontological ones, and they changed the nature of social representation.’

The splitting of the ontological (and directional) binary – from the subject-object, to the positional (and intransitive) triadic of agency, hyle, and observer – becomes a crucial moment and pivot of the Marxian travail. The splitting mutation, of from two to three, from binary to triadic, makes it painfully less transparent to sense how ‘greenhouse’, in its totality as misnomer, does indeed function as a blunt surgical instrument to incise and to amputate. It works to dis-organise the cultural from the natural. Such ‘disorganisation’ is not just of the disbanding of the coherent relations that allow for the organic flow of life to flourish. It is also the removal of the artifice’s potential, as human prosthetic for memory to labour as an ‘organ’, as opposed to the colonial void, to process and produce substances that facilitate and dis-play living as authentic form for experiencing natural history.

And here is where I would, just for a moment, depart from Crary. As accurate and provocative as his analysis is, his proposition that ‘greenhouse’ collapses the interior and exterior binary, and even threatens the boundary between the public and private, seems to me misguided. That is, precisely, its illusory mirror transparency. I would tell you instead

that the greenhouse, particularly in its superstructural form, works physically and mentally towards further reifying those paternalistically infantile, oceanic, binary ruptures. The perceptible and imperceptible, physical and invisible, conscious and unconscious forms of its ensuing manifold metaphor of ‘greenhouse’ is that which operates in our ‘disorganised’, separated, amputated conceptions of culture away-from nature. The empty tentacles extending from that manifold are the embodiment of the male ‘autogenesis’ are construed by the interior-exterior binary as its codex. The ‘green’ of the house, of the home, has become disembodied by the rule of instrumentalisation, vis-à-vis the purposeful messianic and perceptual dysfunction laid with those sets of binary bricks. The disembodiment lies deep within that moment of dissociated misdirection... the moment the pre-colonial art and craft of agriculture was forced to become the namesake of the industrial-colonial drive. And ultimately, it is the partitioning of life from the effects of derangement and of destabilisation that make dissociative imperceptibility possible by the breadth that only geological time-scales can hide.

And that is why you and I walk all the way here...

It is to sense, beyond any image, that greenhouse is the hyle itself, not an example of the ‘stuff’, but that it is the stuff itself, the physicalisation of the disembodiment. Its pervasive and still-unrecognised putrescence is the very petrification of the base/superstructure model... and that is perhaps why, unconsciously, we refer to the messianic versions of greenhouses as immense, endless, monocultural greenhouse superstructures. Is that it? Is it that the phantasmagoria has become petrified to the point that it is contradictorily desired by the neo-colonial free-market, as a classic form of dysfunctional, self-destructive behaviour being, quite literally, the ‘ultimate’ mode of speculative capitalisation?

Maybe, just maybe, there are alternative paths away from our descending walk. As the core technology of the unnatural, the greenhouse may serve not as backdrop or as superstructure, but as transitional infrastructure, as filter, pedestal, preparation, and speculum. Just as it does for Manet and for Benjamin – and as for Buck-Morss and Crary thereafter – greenhouse, when firmly, critically appropriated through proportionate mental and ergonomic scales, may lead to contextualisation,
diagnosis, and remediation of the operative-contradictory, dysregulated potential of dissociation: to the differentiation of the auratic away from the phantasmagoria. Crary points to the ‘agnosia’ of Madame Guillemet as one that could be portrayed as a pathological behaviour. But Crary also points to it as a potential mode of resistance against conventional patterns that organise perceptual information. Far from ‘normal’, while surely not ‘pathological’ (that is, as far as those not in the ‘grip’ of the paternal-colonial bandwagon are concerned), you and I ever-so gently see Guillemet’s lack of ‘attention’, her despondence, as an immense potential that, in her absent reverie, yields ‘a new synthesis of memories and habits.’ That stoic and destabilising lack of associative disposition projected by Madame Guillemet through her face in the painting, apparently drawn from her own role in Parisian social life beyond the painting, serves to absently embody an imperative of perception that tempts us beyond the modern.

Certainly, dissociation plays a crucial role in the perceptual process, one that, as per Buck-Morss and Crary qua Freud, allows attention to isolate particular content and separate it from a larger cognitive field, particularly away from trauma. Dissociation here can, indirectly and intransitively, deploy affirmative processes by way of negation, which may disclose and process ‘another path, of invention, of dissolution, and creative synthesis, that exceeds the possibility of rationalisation and control.’ That said, unfortunately, the role of dissociation in perception that once facilitated that form of isolation and focus has not quite yet yielded the kinds of resistances and divergences needed for us to find other paths away from that messianic march of Global Warming. This seems to ring evermore true in the current age of social media. Dissociation has thus again and again been equated with depersonalisation and dysregulation (as slow, long-term self-destructive patterns) due precisely to the modern trauma of mechanised labour and the incessant ‘shocks’ of urban existence. Therefore, it is important to ground such value when we are discussing its role. Is dissociation a potential or a symptom? There is no answer to this question, for the necessity to ask the question in that binary form is, at the core, the problem to begin with.

176 ibid. Crary 2001, 94.
Why would we dissociate the ‘psychological pathology of dissociation’ from the ‘perceptual potential of dissociation’? Surely the answer belies the very condition of living today. And it is exactly there, down there – at that splitting ‘double bind’, at that deep crevice – that the power structures want us to be. Don’t believe me? How many times have you considered whether to ignore or engage the politics of polarisation, namely the vile re-emergence of nationalisms, particularly in the forms white privilege and of race/faith-based fascist tendencies? It seems that this is more a professionalist separation of the Fordist kind, rather than a disciplinary differentiation of reality. The psychological and perceptual seem here intrinsically entwined in such a manner that neither should be treated as a spliced binary, but rather as a productive correlation stemming positionally from a third vector. To use Buck-Morss’ model, what may emerge between the pathology of the observer and the potential of agency… is trauma as hyle. Treating trauma as our material of applicable, remediative, triadic flows makes ‘dissociation’ better anchored to serve as an uncommon – from which divergent associations are desired to occur.

This is not unlike what we may register as the seeming incongruence between Marisol de la Cadena’s ‘Uncommoning Nature’ and Lauren Berlant’s ‘The commons’ [see c.(D)]. While the former looks to the unseen injustices of exploitation as an Anthropo-not-seen, and calls for co-existing ‘divergences’ away from Western ideals of commonality, the latter strives for a concept of non-reproductive transitional movements and patterns, or for a ‘poetics of infrastructure’ to provide transitional commons as temporary spaces for counternormative politics. They both do seem to address the condition of visual dissociation as a general problem of imperceptibility due to either excess, or lack, of ‘distance’, respectively. They also express the wish to facilitate language and tactics to process oppression and social-environmental trauma. But whereas it is clear that de la Cadena [and Stengers, see c.(C), & Exegesis] suggest ‘divergence’ as a productive form of dissociation, Berlant implies that ‘support’ patterns and movements can register as infrastructures, a kind of dissociative capacity that, if cautiously pursued, may coherently recede, gaining an operative invisibility. The former allows not for a singular world, but for many worlds that are ecologically associated by their constitutive divergences. The latter looks for dematerialisations
that foster greater perceptual distance, or what Berlant calls an ‘aspirational ambivalence’ for resisting and absorbing advanced capitalism’s blows and lack of social-environmental adaptation.

I would argue that the ebb and flow of ‘dissociation’ between Berlant and de la Cadena is an oscillation between the conceptions of distance as affirmative divergence, and of the receding invisibility that makes infrastructures operative. That flow, between the operative and affirmative qualities of dissociation, aid us further in verifying, among other things, that trauma – whether as unseen injustices, or the blows of advanced capitalism – has a role in providing the contours and resonances for discerning, and dis-playing that which may be concealed; and it is what is to be overcome. Both the divergent and infrastructural versions of de la Cadena and of Berlant to me propose elegant kinds of ‘worlding’ - of the new material actions that bring together our perceptual frameworks in tune with those of the environment. But, what (and when) we find between them, ought be another type of flow of aura. It ought be a differential kind of ‘surface unity,’ that instead of withholding the trauma from processing the disorganising amputation driven by technoscientific enframing, we instead find a remediative medium, an auratic affect which may facilitate, again, as Crary suggests, ‘a new synthesis of memories and habits’.

Our turning of the perceptual and emotional contradiction between dissociation – which may reside between divergence and infrastructures, or between the protective reflexes of depersonalised reverie and/or of dispassionate focus – does ultimately bring us back to articulate a lasting, and hopefully transformative, critique of the ‘surface unity’ of aura. Aura’s function in technoscience, as beset by Benjamin, is a potent form for driving authority and mystification, between the collapse of perceptual distance and its illusorily compensatory form of phantasмагoria. Once more, Cooper tells us, the myriad of concerns that Benjamin strove to research, beyond ‘The Work of Art…’ essay and on through the Arcades, was an experimentation process undertaken for the purpose of elucidating the value of technology in social life, leading to his own most ambiguous mental and dialectical impasse:
'In the Arcades [as opposed to the earlier ‘Work of Art…’ essay], Benjamin is much more ambivalent about the role of technology. He recognises its double function: on the one hand, technology extends the human senses, increases the range and depth of perception; on the other, the technological extension of the senses leaves them open and vulnerable…'  

Such a seemingly naïve impasse moves Benjamin to vertiginously renegotiate the opposition between past and future. He contrasts their convergence in order to ‘conjure’ the present, passing ‘through’ the phantasmagoric pestilence, by way of ‘interpenetration’ [see c.(G) & c.(A)]. That is, when Benjamin states that ‘the decay of aura and the atrophy of the vision of a better nature…are one in the same’, it is evident that in the tension between ‘decay’ as entropy, and within ‘vision’ as a potential and affirmative future, there is a dialectical aspiration for a resulting, affirmative effect to emerge. This technical, dialectical strategy is not just a reflexion of the complex and elusive embeddedness of technology in our lives, but it is, more so, particularly an aspiration for experiencing ‘natural history’ in its actual, living, ramified, biological form: a multidimensional authenticity emancipated from the ethnocentric and anthropological framework. It seems to be a sincere reflection of Benjamin’s own aspiration for a ‘historical index’ that is projected by the dialectical image that delivers the unconcealing and presencing of history drawn from both the past and future.

In this case, ‘experiencing’ the historical index as a form of aura would prove worthy, since technology would cease to enforce its technoscientific violence, and manifest instead as an instrumentality for fostering and redefining ‘social’ forms. Again, according to Cooper, the adverse qualities Benjamin assigns to aura in ‘The Work of Art…’ do not ultimately define his conception of ‘auratic experience.’ Actually, Benjamin concretely argues that the aura of the displayed objects of modernity induce our passive modes of experience. But, in writings of Benjamin such as ‘The storyteller’ and ‘Some motifs in Baudelaire’ we read him pointing to and contrasting communal interaction; projecting an aura
that can only be understood, not as passive, but as an affirmative form of experience. We are thus required to revisit experience once more in our effort to nuance Benjamin’s unanswered question of technology. As per Cooper’s analysis —

‘Like Heidegger, who argues that the objectification of nature also leads to the formulation of the human subject as standing-reserve, Benjamin claims that industrial technology restricts the subject’s ability to derive meaning from their everyday experiences.’

and

‘Technology, in its reproductive capacity and in its ability to bring everything close, also rapidly increased the functioning of voluntary memory, which, following Freud, destroyed the fabric of connections linking Erlebnis to the kind of richer and deeper experiences that define Erfahrung. Thus, in bringing everything closer, technology also transforms the bond of closeness in the sense that it simultaneously brings close and allows a certain standing apart. Benjamin’s discussion of the technological transformation of experiential categories serves as a particular example of an ontological contradiction…. One of Benjamin’s responses to the separation of Erlebnis from Erfahrung is to advocate forms of action that occur outside the sphere of instrumentality. These can be grouped around the idea of a lessening of subjective attention to the environment that surrounds it. When writing on topics such as Proust, the flaneur, surrealism, or the experience of hashish, Benjamin’s common theme is the advocacy of states of consciousness that allow one to rid oneself of instrumental attention.’

Benjamin here wants to conjure an aura with which one may rid oneself of ‘instrumental attention’, just as the kind of ‘dispassionate’ object

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181 ibid. Cooper 2003, 58.
182 Again, from the conversation with Pierre Cabanne, Duchamp said that the yield of a fourth-dimensional projection may be the produce of a ‘dispassionate’ observation of its own three-dimensional object. I find that it is not far-fetched to associate that fourth-dimensional projection of Duchamp to the kind of aura that Benjamin aims to conjure. See Molderings 1999, 40.
or the lack of attention of the reverie that Mademoiselle Guillemet exercises in DLS. Through Manet’s own hand, Guillemet's is a prosthetic to deflect the encroaching advances of that tiring old man, vis-à-vis signifying a deflection against the gripping shocks of technoscience. Through her ‘dispassion’, the instrument is dismantled. Through her reverie we may resist the violent and flattened encapsulation of natural history, just enough to sense the concealed disembodiment as the superrepressed forgetfulness that the greenhouse induces (in the form of the arcade, and of the conservatory). In that dispassionate, dissociative context, as we look to encounter other dimensionalities that are neither material nor mystical, one must ask if aura is, then, worthy of being revised, not for the same utopian ends in terms of a distinction between social forms and their specific contents, but to, indeed, ‘develop a theory of technology that retains the ethical intersubjective qualities of the aura, without its repressive aspects.’

Rebecca Comay again reminds us that over time, Benjamin, while still superimposing together and leaving unresolved conflicting concepts, did lean towards a kind of technological aura that would flow from that latter, non-repressive capacity. The sensing of such aura through the labouring of an alternative theory of technology would need to occur while one remains vigilant of its romantic vulnerabilities, meaning that the aforementioned yearning for auratic experience proposes a significant vulnerability that, by yearning, we would once again biblically ‘Fall’ into the romanticising and fetishizing of aura, taking us nowhere but further down our immature, traumatic, oceanic and messianic march towards self-destruction. Comay indicates instead that Benjamin reproaches Adorno’s appropriation of Marx’s commodity fetishism, of how it conceals the traces of human labour, as insufficiently radical. She further contends that the ‘humanisation’ of nature as natural history, according to Benjamin, ought not arise from an anthropocentric understanding, but instead from sensing a ‘common origin’ where Benjamin saw aura as the recognition of the ‘forgotten human residue in things’. This does not mean that man is master or purveyor of the natural, leaving behind his residues, but that such residue is something far more primitive, or ‘anterior’, and that it operated in the defining of man and nature.
as a ‘forgotten’ recognition that something is deeply, interdependently shared between the human and the non-human; it is something forgotten that goes beyond the anthropocentric, i.e., something that precedes and succeeds the ontological limits of the natural and of the reified (artificial). A more primordial potential of aura emerges towards mending the very relations that advanced capitalism’s version of modernity has severed – certainly not in a spectacular reification that sustains the status quo, but in a performative manner that would provoke the vertiginous turning towards the ‘healing work’ of remembering to forget, of remembrance. According to Comay, it is through a revised theory of technology that we can exercise

‘the (re)experience of aura...that exceeds the egocentric grasp of a humanistic self-consciousness and indeed points to a humanity beyond self-production and control.’

But it needs to be said: Benjamin would emphasise that the avoidance of such romanticised retrospections, of principally turning nature into a new foundation, would hinge upon a process of ‘(re)experiencing’ aura in ways that avoid organicist aesthetics of living form, even beyond the surface treatment in reference, again, to the Jugendstil. Such interpretations, namely as Marxian tendencies to derive historical development from natural laws, would need to be rejected for the seeming return they would deliver towards contradictory ideological productions, namely of Social Democracy and Darwinist representations of social change. No less because they'd seek warranty and security, again, by remaining away and sheltered, continuing to illusorily and delusionally externalise nature.

We are challenged to articulate dissociation in manners that negotiate affirmative and therapeutic processes of remembrance, while avoiding to take that biblical ‘Fall’ – again, in terms of imposing and/or enduring further trauma of the forgetting of the superrepression, and of the ‘forgetting of the forgetting’ as its anterior relation. We have walked this far because we ought not forget that the present, pathological aspect

of dissociation is in no small measure an intrinsic component of our still-decaying proletarianisation. It is the loss of the most basic physical memory, of environment... and thereon the loss of skill to adapt, cope, and shield oneself affectively from the traumatic, daily experiencing of industrial disproportions. It is this aspect of proletarianisation that has illusorily propelled the modern man's monumental self-sustenance to represent, again and again, the re-membering of that loss, of that amputation, and thus the representative reconstruction of the world.

Confronting these contradictory ideological productions bring us about another intersection on our walk, where I then take license to recite an energising proposition by Comay:

‘The Stillstand – an arrest both of the flow of events and of the “flow of thoughts” – exposes “a present which is not a transition”: a “Messianic cessation of happening”. This present is “not a transition” because logically there can be no bridge or transition to what is unforeseen. The angel “has the idea it is about to move”; the revolutionary classes are “aware that they are about to make the continuum of history explode”; at the “moment of danger” the oppressed class senses that “a conformism is about to overpower it”. The Jetztzeit [the inter-penetrated past and future] announces the imminence of that which, impending, resists the immanence of what is given or presentable: an “absolute future.”

Kafka, even while practising his livelihood selling insurance policies, preaches with “unrestricted pessimism” the ultimate

185 ‘As an expression of the fulfilment of nihilism, transhumanism is a project of de-noetization, that is, of noetic dis-interiorization (of proletarianization, loss of knowledge – of the knowledge of how to live, do and conceive), and this dis-interiorization is founded on the delegation of noetic services to analytical artefacts and to interfaces designed to optimize interactive reaction speeds – as in the case of implants designed to optimize the reaction speeds of fighter pilots via optical fibres operating almost four million times faster than nerves. From this perspective, transhumanism is the anti-economic, because entropic, culmination of proletarianization carried to its final extreme – which then, too, is entropic to the ultimate degree.’ - Stiegler, Bernard. The Neganthropocene (Translated by Daniel Ross, Open Humanities Press, 2018) 84.

untenable of all guarantees. Baudelaire similarly renounces every attempt to find in organic nature (hence equally in the organized history of historicism) any security or “warrantee”. The “Messianic cessation of happening” is thus the response to and responsibility for that which strictly exceeds all contracts or securities: “put differently, a revolutionary chance in the fight for the oppressed past”.

A chance: that is, “we have been endowed with a weak Messianic power”. For a generation swept along in the “stream of tradition” or lulled into “moving with the current”, Eingedenken offers only “the smallest guarantee, the straw at which the drowning man grasps”. In the face of an “enemy [who] has not ceased to be victorious”, the hunchback’s infallible “countermove” becomes in fact the belated response to what is, as such, unanswerable: a pure promise without authority or will.’ 187

Unfortunately, although there are numerous instantiations where the political can lay claim to contributing to the resistance and even reversal of the dissociative effects of this kind of proletarianisation, no less in the ones presented here as the Arcades and Dans la Serre, it is evident we have walked deeper into the abyss, consciously unaware, sedated, like frogs in a heating pot. The way towards the intersection that may emancipate us away from that necropolitical path is to re-enact that weak Messianic power, so to move away from the entropy of industrial messianism. We don’t need to start. We can just instead re-visit the dialogues with those non-human persons that have facilitated proportional environmental subsistence. It is perhaps a way to reengage in a form of dissociative therapy that fosters careful, proportional organs for diverse, queered, alternative paths towards neganthropy… a negative entropy that re-mediates our severed relations from nature by fundamentally deposing the patriarchal, anthropological mastering of our planet.

(Fig. 73) Wardian Table shown at ‘Agropoetics: The Soil is an Inscribed Body’, Savvy Contemporary, curated by Elena Agudio, Marleen Boschen, and Bonaventure Ndikung, Berlin 2019. Source photo: Raisa Galofre.
EPISTEMOLÓGICA
convolute (D)_3

GREENHOUSE EPISTEMOLÓGICA: From Phenomenotechnologies to Parastructures, and the careful acts of Social Pedestals

ABSTRACT:
The dissociative, post-ontological forces of Global Warming are predicated by the industrial superrepression of the colonial trauma that is entrenched in technical memory.

Through convolute (D)_3 I attempt to explore pertinent, collected, physical and metaphorical ‘phenomenotechnologies’ related to the ‘observation’ and ‘construction’ of the epistemic object. As we walk with a growing set of Caribbean perspectives, I attempt to contrast some of my previous and present PhD related-works and research activities. Such contrast allows me to reflect upon what brought me to observe and depose ‘greenhouse’ as remediated enframing and environmental form for dis-play.

While reviewing that trajectory, I find that potentializing a remediated ‘greenhouse’ – as sculptural object-relation for research – may yield affirmative, differential forms between the human, non-human, and environmental ruptures. By unfolding ‘greenhouse’ away from being the paradigm of technoscientific phenomenotechnology, and by embodying its spectral form as parastructure, we may gain a social pedestal...one that supports manifold ways in which to diffuse the logics of the forgotten typology of Epistemologica; for studying the methods that stimulate a care-ful, affirmative, more-than-human practice of epistemológica.
SCAFFOLD OF TERMS for c.(D)₃

[FIND SOURCES OF DEFINITIONS AT THE INDEX OF TERMS pp.733-757]

perception (n.) p.750 is generally referred to as the triangular relation between position, stimuli, and judgment that defines the ‘core problem’ of Perceptual Research. More generally, the core problem can be relegated to the affects and effects a ‘subject’ may attain by the confluence between (1) a position and perspective where a mind ‘stands’; (2) the ‘sensing’ (ranging from the visual to the aural, to the somatic, with the difficult to divide relations between tact, smell, and taste); and (3) the ‘relations’ that are formed by judgments with and for an ‘object’, which the subject may together create. This triad is traditionally addressed in phenomenology and metaphysics, particularly as to how it influences the way ‘observation’ informs (experimental) science, in the broadest of terms. It is arguably further defined by the emergence of semiotics as the study of sign-values in socio-scientific contexts.

post-perception (n.) p.751 Mark Hansen tell us (through the filter of cinematic theory) that ‘stated in the terms of this at least partial identity between perceptual judgment and abduction, the question that post-cinematic images raise is this: can the Firstness of the image made available or indeed produced by digital media, a Firstness which following Peirce’s understanding constitutes a perceptual hypothesis about an unknowable, directly inaccessible reality, lead to new kinds of perception? Moreover, given the fact that all perceptual judgments “constitute a hypothesis concerning the reality of one or more qualities,” i.e., concerning the reality of Firstness, can the perceptual judgments catalysed by post-cinematic images be said to differ in kind from properly cinematic images, including the time-image, in the sense that, far from constituting perception-images, they yield perceptual judgments about a realm of reality that cannot, strictly speaking, be perceived?’

Epistemologica (n.) p.740 H.J. Rheinberger tells us that these are ‘the things around which the knowledge process unfolds, but that have been relegated to the margins of the history of science. Yet they play a decisive role in the development of such process of construction of
scientific knowledge (by its nature as social community). As a rule, the systematising sciences extract their objects from their traditional natural context and their ‘natural’ ambiguity, and incorporate them into an order specific to the sciences in question. The result is, say, a botanical garden, rock collection, or herbarium. The things thereby become part of a theoretical order and an object of the determinate epistemic practices. Epistemologica therefore should be understood as all those material things rendered permanent in various ways that play a part in knowledge production by enabling facts to be exposed and elucidated.’ (my emphasis) With Rheinberger’s definition in mind, I have slightly modified the term by adding a tilde on its ‘-logic’ component, suggesting, from my perspective, a Latin American inclination, that, after ‘careful’ review, becomes a non-Western ‘-lógica’ for the practices of social interface beyond ethnocentric and just-human perspectives.

**preparation (n.)** p.751 (translated from the German Präparat) represent a special class of Epistemologica, as display and support structure. They play a critical role in the biological sciences, the sciences that study living things. In these sciences, diverse preparations and techniques for producing preparations have been developed, because special arrangements are required to fix and stabilise living things for gaining knowledge about them. But one of the paradoxes of science becomes particularly clear in the case of scientific preparations… as per H.J. Rheinberger – ‘All the work that goes into manipulating them is deemed to have succeeded precisely when it (the support structure) has been made to disappear in its object. Only then is a preparation considered authentic.’ The fundamental distinction between preparations and another class of Epistemologica that can only be mentioned here are **models**. A model is defined as a limit object or rather as the transposition of the model’s object into another medium. Thus, whereas the model can at best claim to ‘look deceptively like’ the modelled, a preparation participates in the very materiality of the thing under investigation. It is made of the same stuff; it is a figuration that this stuff has been made to yield.

**demonstration (n.)** p.737 has several meanings here. It is the simple act of showing something (not unlike display). It also is the act of mobilising a political intent, ideally through, but not limited to, public space. The other meaning signifies an activity traditionally performed by ‘hard’
science professors, prepared by their assistants, who are in turn called ‘demonstration curators.’ These are still known today as foundation-level teaching activities performed to display proof of evidence about natural phenomena—say, of physics, or of chemistry, etc. Most of these demonstrations first emerge as experiments that are then standardised by academic institutions into pedagogical props that would in turn accompany a skilled lecturer, enhancing the students’ ability to perceive the various ‘levels of reality.’

**Ostension (v.) p.748** is the general act, or ritual of gestures that point to a thing in order to heighten its overarching importance. In the context of theatre and semiotics, Humberto Eco refers to ostension as the process of the de-realizing of a given object in order to make it stand instead not for itself but for an entire class of things. In the context of the history and philosophy of science, Rheinberger also refers to ostension, similarly as an act of pointing, but arguing that such act is insufficient as to provide the qualities that allow an epistemic thing (the thing being investigated) to become a technical object (where the relation between concept and object is no longer problematic). Such tension is central to determining the typology of Epistemologica that Rheinberger calls to expand, ‘a list that is far from exhaustive’.

**Trans-scale (v.) p.756** Boaventura de Sousa Santos tells us that ‘[s]ince different knowledges privilege different scales of phenomena, the epistemology of seeing I am proposing here suggests that we learn how to translate among different scales. The limits of a representation on a given scale become more visible when we compare that representation with a representation on a different scale. Trans-scaling is thus a demarche that permits us to contrast limits of representation with the purpose of elucidating what is at stake in the choice among alternative criteria of relevance. Trans-scaling presupposes a certain unlearning of current criteria of relevance determination. It invites us to consult social reality through different cognitive maps operating at different scales. The learning process consists of raising the consciousness of the limits-contrasting representation with orientation, position with movement—without getting paralyzed by it. A higher consciousness of limits is at the core of the kind of prudent knowledge I am proposing here, a form of knowledge that teaches us how to keep consequences under the control and within the sight of the actions that cause them.’
curious perspective (n.) p.737 de Sousa Santos also states that it ‘...is the search for a different angle from which the proportions and hierarchies established by normal perspective are destabilized and their claim of a natural, orderly, and faithful representation of reality accordingly subverted. In the seventeenth century, artists and art teachers began to criticize Alberti’s proper perspective for being fully manifest and comprehensible. They then began to explore “how rules of perspective can magnify or diminish, multiply or distort the image”. Their idea was that the illusion of reality was something not to take too seriously but rather to take as play and to play with. In my view, this curious perspective, both playful and unsettling, must be brought into play in the determination of degrees of scientific relevance. The criteria of relevance based on a supposedly mathematical and rigidly established perspective tend to be reified by their recurrent and unproblematic use. Reification means, in this context, the conversion of the illusion of reality into a compressed, credibly faithful reproduction of reality. On the contrary, the curious perspective reconstitutes the creative processes at the core of modern sciences, a production of illusions that, rather than imitating society, reinvents it.’

kleinform (n.) p.745 is an example of a non-orientable surface; it is a two-dimensional manifold against which a system for determining a normal vector cannot be consistently defined. Informally, it is a one-sided surface that, if travelled upon, could be followed back to the point of origin while flipping the traveller upside down. Other related non-orientable objects include the Möbius strip. Whereas a Möbius strip is a surface with boundary, a Klein bottle has no boundary (for comparison, a sphere is an orientable surface with no boundary).

relational circuit (n.) p.752 is a semiotic and a topological Kleinform that aids in amplifying the perception and phenomenology of everyday experiences. It is an original topological figure Paul Ryan called a ‘sign of itself’ that enables us to organise what Peirce’s conceived – from Kant’s categorical imperative – as the three essential inferences of perception: firstness, secondness, and thirdness. As an original, performative formalisation of the categorical triadic, Ryan applied the relational circuit as its simultaneous support structure and medium – it is ‘what the staff and bars are to standard music notation’. The reference to musical notation was not arbitrary, as he devised a ‘sign language’ and a ‘practice’ to construct an analogous triadic. Very much
as a robust research-based approach, Ryan environed the ‘language’ and a ‘practice’ as Earthscore and Threeing, respectively. Earthscore is a notational system that can orchestrate different media into ‘symphonies of knowledge’ that support living on Earth in sustainable ways. It is along with the Relational Circuit and Earthscore that he develops a formal and performative approach to working collaboratively – a yoga of relationships, he then called Threeing. Threeing is a ‘three-person solution’ to relational confusion. At the core of this solution is a voluntary practice in which three people take turns playing three different roles: initiator, respondent, and mediator. Through this role-playing, a clarity and an ease about relationships emerges. According to Ryan, this clarity and ease can be cultivated by practice and developed into healthy sustainable relationships. Ultimately, the topology of the relational circuit has so far been represented as a two-dimensional image – in drawings, diagrams, and as a series of paintings – and in its last iteration, as a series of rugs I weaved (and a pavilion I designed) in collaboration with Ryan for Documenta in 2012 [see LIST…, pp.66-7]. The cosmos of this triadic is one I inherited through my years of apprenticeship, friendship, and collaboration with Paul (and his partner, urban ecologist Jean Gardner), and it is one that I am still learning, as it has affected, and continues to affect, my work-life at all levels of my research & experimentation.

concretisation (n./adj./v.) p.736 according to Gilbert Simondon, is the process through which technical objects progress analogically to the living beings’ thought, who are the only ones who are ‘concrete from the beginning’. Technical objects, on the other hand, are never absolutely concrete. The concretisation of technical objects has several aspects, depending on whether one approaches it at the level of the elements, the individuals, or the sets. Simondon, at the level of the elements, further stipulates that technical objects are distinguished by two aspects. First is the augmentation of the ‘internal resonance’ between elements that compose the object; this is the idea of a growing organicity, through which each piece ‘cannot be other than it is’. Second is the fact that an element of an object becomes pluri-functional instead of having a single function. Simondon develops here the example of cooling fans in the thermal internal combustion engine. That said, there is a ‘third’ aspect that no longer pertains to the elements that compose the object. This aspect pertains to the relation of the object to its ‘associated
milieu’ in so far as the latter is external, and not of internal, resonance. This is the process of the ‘individualisation’ of technical objects which only fully accomplishes itself in the machines of modernity understood as ‘technical individuals’. In today’s age of informational, binary sets the convergence between science and technics – and therefore the naturalisation of technical objects – is fully accomplished, which is the last aspect of concretisation.

**naturalisation (n.) p.747** for Simondon, the naturalisation of technical objects is the result of technical progress, since ‘the progressive evolution of technics, thanks to the increase in value of each invention constituting an object, brings about natural effects in the world of technics, all of which results in the fact that technics becomes progressively naturalized’. The consequence of this, with respect to knowledge, is an ever-increasing convergence between technics and science. This convergence has two reciprocal and complementary aspects: (1) that the technical object is conceived of as a physico-chemical system in which reciprocal actions take place according to a growing number of natural laws that are scientifically known; and (2) that it is scientific knowledge that depends on technical activity, to the extent that the growing integration of natural laws into technical functioning turns the technical object into a mediator between the human being and nature that remains itself yet to be discovered. Susan Star expands this definition by telling us that ‘by “object” I mean to include all of these things: stuff and things, tools and techniques, and ideas, stories, and memories – those objects which are treated as things by community members…A community of practice is defined in large part according to the co-use of such objects, since all practice is so mediated. The relationship of the newcomer to the community largely revolves around the nature of the relationship with the objects – and not counterintuitively, directly with people. Acceptance or legitimacy derives from the familiarity of action mediated by “member” objects… A better way to describe the trajectory of an object in a community is as one of naturalisation. By naturalisation I mean stripping away the contingencies of an object’s creation and its situated nature. A naturalised object has lost its aura of anthropological strangeness, and is in a sense de-situated in that members have forgotten the local nature of the object’s meaning.’

**medium (n.) p.746** Benjamin tells us that ‘just as the entire mode of existence of human collectives changes over long periods, so too does their mode of
perception. The way in which human perception is organized — the medium in which occurs — is conditioned not only by nature, but by history. With that in mind, I would like to complement the definition with my collaborations with Ectoplasmic Materialism [see c.(A).] and with the reading of Søren Andreasen & Lars Bang Larsen’s text *The Critical Mass of Mediation* which focuses on mediation. What I mean is that the definition is not cited with the intention of omitting the capacity of a ‘medium’ as one who channels and conjures paranormal communications and activities with ghosts and other spectral figures. Nor does it ignore the interpretative potency of mediation, one that renders inaccurate, and polemicizes the assumed impartiality of media (as the traditional name for physical, discursive, and electronic materials that constitute ‘body’ of an art work, as well as the vast elusive network of mass dissemination).

**auratic (adj.)** p.734 can be thought of as a unit that reflects the potential of an object-relation, not to serve to dominate or colonialize, but to (1) innervate other existing relations, particularly those that foster ecosystems to operate on continued and biodiverse symbioses, or (2) to remediate the relations that have been previously ruptured by illusory human privilege or colonial intent. Rebecca Comay first tells us that ‘the (re)experience of aura...exceeds the egocentric grasp of a humanistic self-consciousness and indeed points to a humanity beyond self-production and control’. I will complement that (re)experiencing with Simon Cooper who tell us that ‘when aura lapses into its degraded form, this is arguably because these prior forms of the social are transcended: looking becomes voyeuristic appropriation, stories become information. This reading allows us to understand the possibilities inherent in auratic experience. It prevents us from taking a one-sided reading of Benjamin on technological destruction. We can read Benjamin’s “other side”, his stress on the importance of the aura “beyond the melancholy interplay of nostalgia and redemption”. Such a reading may begin to explain the contradiction whereby the death of aura is welcomed as an integral part of Benjamin’s utopian project, while at other times aura is revived for the same utopian ends in terms of a distinction between social forms and their specific contents. The question that remains for us, the question Benjamin never solved, is how to develop a theory of technology that retains the ethical intersubjective qualities of the aura, without its repressive aspects.’
transindividuation (n.) p.757 is defined by how the modern human society of work was born from the industrial revolution, was made up of merely interindividual relations, and as a consequence, sometimes found itself alienated by the machine. From that recognition, Simondon argues that, by virtue of binary informational sets driving the digitalisation of life, we could construct society itself as a transindividuality that is indissociably human and technical. Simondon wrote that the ‘value of the dialogue of the individual with the technical object’ was ‘to create a domain of the transindividual, which is different from the community’. Stiegler interprets this complex by explicitly defining ‘[t]he transindividual as what, through the diachronizing co-individuation of the “I”, engenders the synchronizing trans-individuation of an “us”. This process of transindividuation takes place under the conditions of metastabilization made possible by what Simondon calls the preindividual milieu, which is supposed by any process of individuation and shared by all psychic individuals. This preindividual milieu is, however, for us, intrinsically artefactual, and the technique is what the future metastabilizes the psychic and collective co-individuation. The technique is thus the “third strand” of what Simondon thought only as a “psycho-social” individuation. The term “transindividuation” refers to this metastable psycho-socio-technical dynamic whereby the transindividual is never a given result, but always, at the same time, a task: that of being commonly desirable at work.’

boundary object (n.) p.735 is perhaps, along with the relational circuit, the evolution of phenomenotechnology that most resonates with the social pedestal… for how it supplements the act of display to not just remove the intent of authorship from its own translatability and/or re-mediative capacity, but furthermore opens itself to being not limited to just anthropocentric perspectives, where the ‘social’ capacity may very well be applicable to non-human perspectives as well. Star tells us that ‘[boundary objects] are both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual site use. They may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is key in developing and maintaining coherence across intersecting social worlds.’
**anarchive (n.) p.733** has been mentioned various times during our walk. It is perhaps the most consequential denominator to enact the transitional potentials of the PhD, no less in its embodiment as the installation in Denmark titled *Anarquivo Negantrópico (Nonsphere XVII).* Again, Derrida stated that ‘[i]f repetition is thus inscribed at the heart of the future to come, one must also import here, in the same stroke, the death drive, the violence of forgetting, superrepression (suppression and repression), the anarchive, in short, the possibility of putting to death the very thing, whatever its name, which carries the law in its tradition: the archon of the archive, the table, what carries the table and who carries the table, the subjectile, the substrate, and the subject of the law.’ The broader material that encompasses this citation continues to expand during our walk, to describe the possibility of ‘greenhouse’, in its manifold sense, and as parastructure, to be the resistive anarchive to the future history of ethnocentric and colonial projections of natural science.

**mnemotechnics/mnemotechnologies (n.) p.747** Stiegler tells us that ‘[h]uman memory is originarily exteriorized, and that means that it is technical from the start. It takes shape first of all as a lithic tool, two or three million years ago. A spontaneous memory support, the lithic tool is not however made to store memory: not until the late paleolithic period do mnemotechniques as such appear. Ideogrammatic writing springing up after the neolithic period leads to the alphabet – which yet today organizes the agenda of the manager. But this calendar object is henceforth an apparatus: the personal data planner, and the smart phone, are no longer mnemotechnic, but a mnemotechnology.’

**social pedestal (n.) p.754** is an infrastructural artform and epistemológica that pertains to the dematerialisation of sculpture. It is not a singular, physical thing, but a time-based form of display that is characterised by multiple types of visible and invisible sculptural objects, support structures, and performative experiences that cannot be reduced individually to either. The social pedestal does evolve from the ‘social sculpture’ (Beuys) and from the ‘expanded field’ (Krauss) in that it also looks to contribute to the understanding of art’s potential to shape, structure and transform society and the environment. That said, social pedestals are attempts at reconsidering the geographic and epistemic blurrings and impacts that consumerism and digitalisation impinge upon the multiple social perspectives required by and for life. Therefore, so-
cial pedestals are installations that foster and display the transformative potential of art by making multi-perspectival interfaces and intransitive environments that operate collectively, without the presence, direct intentionality, or predetermined outcome of the producing artist or the host institution.

(Fig.74) Erik Sjödin’s sample of Azola on display at the Aquaponic pond of Earthscore Specularium, Färgfabriken 2015. Photo source: Berrios-Negrón.
Some Tracings of Phenomenotechnologies

(Fig.75) Wardian Table at The Institute of Endotic Research in Berlin 2019. Source photo: Lorenzo Sandoval and Benjamin Busch (T.I.E.R.).

On the following passages, I will try to walk us back from the state of 'phenomenotechnologies' that the arts and sciences have ‘become’, to trace them to their nascent forms as ‘mnemotechnics’. That retrospection is neither linear nor historical. It is, again, more a kind of reverse-engineering [see c.(G)], where we may stumble upon different moments and things that don’t pertain to any specified chronology of what may eventually constitute phenomenotechnologies.

First though, I just wish to constellate for you what I am looking to define when I refer to ‘potentialising’ social pedestals. That potential is the positional energy whereby the possibility of encounter occurs still before perception. Whether the encounter becomes truth, fact, fiction, or hearsay is not of my concern. It is not some type of ‘authenticity’ I am researching.
What I am re-searching, as iterations, is to deploy moments (albeit experiments) where I can observe and reflect upon how I, the individual, and/or the collective may negotiate the technics of what I defined as environmental form. This revised, impure, possibility of encounter with environmental form is the yet-unmediated ‘auratic’ form for life. It is what I deem critical for decompressing colonial memory and transitioning away from the general violence of commodification. By way of the retrospective form of the passages here presented — in regards to the interplay between phenomenotechnologies, parastructures, and social pedestals — I reflect upon how I have explored those potential encounters through various infrastructures and forms of displays . . . namely through the Turtle, Nonsphere, and Y-Table series of my work [see LIST... pp. 57-95] and how they (continue to) lead me to the deposition of ‘greenhouse’ away from its commodified aura (as technology and ideology).

As we gain momentum, let us review the traces of that aura (of techno-science) that will lead us back to ‘phenomenotechnologies’. Let’s start by reminding the passage of memory, from mnemotechnics to mnemotechnologies. Bernard Stiegler tells us that

‘To sculpt, to paint, to draw is to go forth to an encounter with the tangibility of the visible, it is to see with one’s hands while giving to be seen, that is, to be seen again: it is to train the eye of the beholder and, thus, to sculpt, paint and “draw” this eye — it is to transform it. Such is also the meaning of what Joseph Beuys calls social sculpture. Human memory is originarily exteriorized, and that means that it is “technical” from the start. It takes shape first of all as a lithic tool, two or three million years ago. A spontaneous memory support, the lithic tool, is not however made to store memory: not until the late paleolithic period when “mnemotechniques” as such appear. It was ideogrammatic writing springing up after the neolithic period that leads to the alphabet — which yet today organizes the agenda of the manager, but this calendary object is henceforth an apparatus: the “mnemotechnology”. Originally objectified and exteriorized, memory, which is constantly expanding technically, and extending the knowledge of mankind and its power, simultaneously escapes their grasp and surpasses them, calling into question their psychical as well as social organisations, and this is particularly sensible with the passage
Here, the transfer from mnemotechnics to mnemotechnologies occurs by an accumulation and organisation of memories. Mnemotechnics are the preceding and ‘spontaneous’ moment of materialisation for memories. The differences between them define the moment of ‘rupture’ [see c.(E), & c.(B)] as that which conceals the moments of ‘concretisation’ and/or of ‘naturalisation’ as either the ‘stabilising’ and/or the ‘disappearing’ act of an object on display, respectively. The modern tension between rupture, concretisation, and naturalisation challenges how perception, supposedly, leaps out of nature in the form of the master virtual illusion: the Anthropos as master, not co-inhabitant, of the world.

Surely, Stiegler’s loose reference to ‘social sculpture’ is a prevalent curiosity for me, particularly in regards to how it aligns with mnemotechnics at the unifying moment of the 'support' it objectifies – as prop between mind, memory, and things – meaning that it is the moment before ‘sculpting’ and ‘transforming’ the mind’s eye, as Stiegler surmises above, where memory is about to be turned ‘exteriorised’ into a mnemotechnology.

When memory is here turned, and colonised, into apparat (namely as the accelerating complex flowing undefined between the physical world, our neurochemistries, social media servers, and our smartphones), it is prone to being harvested and commodified into a ‘loss’ (of skill and knowledge), again, becoming central to that ubiquitous Marxian moment of proletarianisation. As such, I subscribe to Stiegler’s own concern over proletarianisation, in said context, and in relation to how it exacerbates the destining of Global Warming. I also position it as crucial to the ‘problem’ of how the model of interiority | exteriority, that is finally reified at the nascence of modernity, is no longer of any use, and only adds, tautologically, to the toxicities exacerbating our perceptual and environmental problems.

These do not only become intensified by digital mediation, and not just...
in terms of human-to-human relations, but in regards to remediating all relations of human unto non-human conditions of environment. By testing that so-called illusion of technical ‘externalisation’, we may in turn come to occurrences of mnemotechnics that allow for moments to conceive of display as unmediated and remediative potentials for affirmative divergences. Rather than mediated, these concretisations deform into severances, as ruptures. This is central to the thrust of my critique of ‘display’ in the context of Global Warming and of why the ‘greenhouse’ becomes the non-local site-specific object for that deposition.

Not rupturing to sever. Interrupting to unmediate, and remediate

‘The alignment of reality with the masses and of the masses with reality is a process of inmesuareble importance for both thinking and perception.’

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This statement by Benjamin, also from section IV of ‘The Work of Art…’ essay, is of course a problematic generalisation, if for nothing else, it employs the hierarchical sub-genra of ‘the masses’ to singularise reality and perception. But, let’s just focus on the spirit of the statement which to me suggests that the ‘alignment’ – which need not be a singular condition – also suggests differentials, contrasts, and therefore dis-plays, all indeed processes of inmesuareble importance for both perception and for thinking.

The act of showing, of display must then have primary significance to attain what is currently referred to as ‘epistemic traction’, a concern that surely adjoins many practices and disciplines. As I define the social pedestal as one evolving from the ‘social sculpture’, I also look to contribute to the understanding of art’s potential to shape, structure

and transform society and the environment. But in contrast to the virile genre of social sculptures, social pedestals take cues from the genre of critical vehicles, as conceived by Polish interventionist Krzysztof Wodiczko, that tend towards less pronounced relations to direct authorship (of author and of authority). Their sculptural form is constituted neither by the support structure by which they are contextualised, nor through the activation of a process to provide a predetermined outcome, even if they are being collectively produced.

They are rather constituted by the problem of how to go beyond the agency of the artist without losing the primacy of the work’s context and site-specificity. By predisposing a support-structure that potentialises the act of interface, we provoke a mnemotechnical moment that may be conjured for those who wish to engage.

If anything, social pedestals look to challenge that disproportionate entropy between self-reflection and collectivity that are primarily driven by the ‘short-term, dopamine-driven feedback loops’ generally considered to be the concerted engineering of social media as operations that drive selected information and indicators to audiences actively, psycholog-
mnemotechnologies. With that in mind, social pedestals are installed to evoke a weak willingness, say a weak messianic power [see c.(B).] to condition and display the transformative potential of perception. That may occur by making intransitive environments that experimentally operate with the presence of the artist-actor(s). But it ought occur without direct intentionality as well, i.e., without expected, pre-determined outcomes desired by those delivering the work or by the agendas of their host-institution. That is not to say that it is entirely devoid of conditioning and contextualisation by those who install the work, for ‘context’ is, of course, ultimately unavoidable. But to ‘pre-sense’ such potential towards fostering memory is, at best, difficult to produce, if undesirable to reproduce thereafter. Such moments of perception and retention are so heavily challenged by the convenience of those so-called memory aids – i.e. by the formulated precognitions mediated by the power structures that rule the modern prosthetics of memory – that the willingness for memory retention seems to be no-longer needed, as it is actively anaesthetised from desire.

That is the core polemic social pedestals look to address: that for those who engage the work, the support structures, as infrastructures, may come to demonstrate, for themselves, affections that re-member (the amputation) and re-mediate (the aura). The relations that are being divided by the modern boundaries and ruptures between audiences, authors, and environment therefore become reticulated, discernible, and entangled once again. Those affects and effects that I have become impassioned-with stem from my own evolving concern over how to engage publics and audiences in manners in which the infrastructures I project may facilitate moments of perceptual consequence and interface. Unavoidably, such concerns lead me to briefly revise my own traces, of how display, pedagogy, and spatiality intersect.

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Working through the Seemingly Inevitable ‘ego-logical’ Construct

I asked your name.
Photo Received
I asked how was your day.
Location Received
You
I blocked
I
over.
love. 191

191 Poem by performance artist Callum Harper, 2016 who enrolled in my course/exhibition Impasse Finess Neversss (the course formerly known as Immediate Archeologies) 2016 - 2017 at Konstfack.
Hardly a desirable effect, the interruptive quality of a display infrastructure can be problematic in that their mere presence may then detract or discourage the potential for engagement. That said, instead of the static (broadening) rupture, it can be valuable to revise ‘interruption’ as it can have direct impact on the way in which epistemic traction may manifest for those about to engage the work. For instance, the recent ideas proposed by Dutch pedagogue Gert J.J. Biesta pay particular attention to a new period of student-centred education, where the student is already transformed into both a consumer and an object of consumption (i.e., education as object of profiteering). He discusses particularly how this tendency of pedagogical commercialisation is creating highly problematic challenges towards both teaching methods and goals, as well as to the broader impact such challenges represent for our broader societies. Biesta is concerned (as I am) with how these new types of consumerised students are being shaped in manners that exacerbate the dissociation of their senses from common modes of perception, taking the sense of self and rupturing it away from genuine physical experience within their worlds and with others. The effects that we are witnessing impact the broader interests of social and environmental potentials, particularly through the polemic advent of digitalised memory (virtual reality and social media).

That broad sentiment – one Biesta does not shy from applying across all levels and forms of education – addresses the vast problems of moralising education by ‘what to desire?’, instead of asking ‘what is desirable?’ In broad strokes, Biesta argues that the transformation from individualised ‘desire’ to the collective ‘desirable’ (a collective that encompasses the ‘other’ wholly, as the environment, not just humans) ought to be turned into a ‘living question.’ In order to do so, Biesta encourages encounters with the physical real… especially with ‘others’ as a genuine strive towards diversity, along with a planet that is not just an endless construct, but that imposes real limits on the fallacy of infinite desires prophesied by free-market consumerism. Such desires, exacerbated in the extreme by digital media, become an exteriorised and unreal otherness that operates, not virtually, but wholly without our selves. He asks that we challenge that seemingly inevitable ‘ego-logical’ construct through a pedagogy of care [see c.(A)]. Such challenge, he suggests, ought to motivate us to strive to create physical connections or ‘good
forms, spaces and perspectives’ between our desires and ourselves… that encountering ‘interruption’ and ‘resistance’ is critically important for this process… because then the world ceases to be a construction that somehow exists outside of us.

What Biesta proposes may be a productive paradox for resisting and remediating the toxic perceptual and epistemic contradictions between us and the environment. The way I read this is that Biesta suggests that in order to deal with these behaviours and trends that foster that toxic, uninterrupted flow of dissociation away-from the world – of ruptures and disconnections from the environment and from others – that we as practitioners engage in forms of subtle and measured ‘interruptions’ that may (ironically and paradoxically) suspend the rupturing-away, say, of schismogenesis [see c.(B)]. In other words, Biesta seems to suggest that in order to provide the needed perceptual ‘distance’ we physically require for affirmative experiences – for instance, of enjoying a naturally human moment such as empathy towards the Other – we ought to foment the behaviours and ‘technologies’ that interrupt these dissociative traumas. That is, we need not to rupture, but interrupt to reconnect… a notion that is particularly fascinating when considering bell hooks’ own tactic to transgress the ‘atmosphere of seriousness’ of reified forms of institutional teaching. Is this analogous to Gaston Bachelard’s own notion of ‘rupture’ in order to deliver epistemic affect?

Perhaps. But, Biesta asks us to take risks, or rather, ‘beautiful risks.’\(^{192}\) I interpret that to mean that we ought to stand between those ruptures in order to nurture, carefully ‘the middle ground’ where the disconnections occur, where ‘real’ education may ‘take place.’ This call to take ‘beautiful risks’ becomes particularly challenging if we think, as Biesta suggests, not just of the problems we all confront (teachers and students alike, in general), and all the technological obstacles that the administrative and political structures may put between us, but even more so in regards to the dissociative challenges to perception – from the sensing of phenomena to moment of cognition – that social media and digitalisation engender as post-ontological effects. Biesta’s paradoxical ‘interruption to reconnect’ must then hinge on other types of interface: to combine and

connect the taking of those beautiful risks of interruption, so to foster, not virtual spaces, but, quite simply, physical places for learning.

Deschooling Desire via Worlding-Centred Infrastructures

Over the years, whether consciously or unconsciously, I’ve kept going back to the counter-colonial influences I was presented with during my own life as a student in Puerto Rico. What I mean is that, because of the ever-present strife against visible and invisible colonial structures in Puerto Rico, alternative formats of teaching and of challenging institution-making (usually now referred to as decolonial practices) were somehow always ‘around’. I remember as a child in elementary school hearing the name of late 19th century Puerto Rican revolutionary Lola Rodríguez de Tió, as well as that of 20th century Brazilian pedagogue Paulo Freire. Back then, I was coming to terms with Puerto Rico’s colonial history, because of personal family reasons, developing quite an allergy to the (still-present, and highly toxic) colonial status quo on the island. In retrospect, and with the recent enthusiasm towards decolonial discourses in academia and the arts, it is clear that the insurgent forms of education that dealt directly with colonialism have been a reliable and desirable fundament to my socio-political thinking.

In that vein, another name that I vaguely overheard as a child attending catholic school was that of Iván Illich; the increasingly pertinent pedagogue who spent significant time in Puerto Rico as teacher and priest, and who eventually became the Vice-Rector of our Catholic University in Ponce (where my parents met and studied). Illich ended his tenure there because the Catholic Archdiocese fired him for his incendiary initiatives, which were aimed at destabilising the Archdiocese’s/the Church’s own recalcitrant sub-structures for religious indoctrination. It was then, upon his firing, that Illich began developing his theory of ‘deschooling’, which suggested a ‘network’ for pedagogy that looked

to destabilise the recalcitrant modes of institutionalised education, and looked to create nodes that would today be referred to as prototypes for self-organised education. Such networks for deschooling were to be rooted in a belief that encounters between teachers and students, albeit social and informal, must be active and deliberate precisely to relieve the overwhelming load of homogenisation that the old models of education perpetrated against the individual. Illich aspired for his proposed networks to reduce the ‘paternalistic secrecy’ of knowledges that institutions somehow still claim to ‘own’. Illich’s tactics were aimed at not conflicting but at facilitating indeterminate processes of self-motivated experiences for the student and the teachers, regardless of hierarchies. One of the proposed tactics Illich put-forth would be to create and facilitate decentred networks he called *learning webs* to replace school buildings (a term he himself was ironically uncomfortable with, for it suggested ‘entrapment’, like spider webs, or fishing nets). Such broad, ambitious transformation, one carrying acute cybernetic resonances, was aimed at dissolving the centralised power of the institution through both traditional and cutting-edge technologies (of the 1970’s, i.e., from postal mail and the emergence of computers) in order to decentralise, and ultimately dissolve entirely, the physical and ideological power-structure that institutions imposed over the experiences of the individual student-citizen.

If alive at the time, and with enough age to think of these notions critically, one would be able to identify with Illich’s strong arguments for the dissolving, and decolonising of the physical, centralised, administrative sites of the institutions by creating decentralised, technological networks of telecommunication such as those *learning webs*. I can sure strongly identify as we speak, with the desire to let social effects take their own trajectories and lead to self-motivated, self-regulated, and self-administered institutions. But when we parse those ideas on present time, with hindsight of how we can witness the unfolding of extremely undesirable effects that social media and digitalisation are having upon human (and non-human) life – especially against the

romanticised concept of ‘learning webs’ – it does raise serious questions about the problems such kinds of technological, if technocratic strategies may impinge on alternative approaches to pedagogy and learning.

If anything, over the past twenty or so years, we see how vulnerable such models are to commodification. I for one can be receptive to the potentials for engaging broader audiences, particularly in the obvious circumstance that so many individuals and communities face by social, economic, or geographic obstacles. But, I also see how the hyper-commercialisation of education itself (an equally toxic conflict of interest as is to profit from healthcare, imprisonment, or from climate change) begins to offer so-called online education, distance learning, m-learning, etc., as a exploitable market-driven model that creates all sorts of questionable activities, only furthering the challenges of depersonalisation and cognitive dissociation we face with social media. Deforming the most basic sense of empathy among students and their teachers, not to mention their ability to empathise with the living environment, is perhaps the most problematic dimension of such models.

Therefore, while not ignoring Illich’s intent to challenge hegemonic tendencies of institution-making, and to facilitate space for the individual student and teacher to respectively create self-identity and exercise desire, the act of providing physical spaces, as Biesta suggests (seemingly in hindsight), brings about a renewed mandate for the place of educational institutions. That is, new kinds of hybrid institutions ought be fostered as productive, physical interfaces where caring interruptions for empathy can overshadow the extreme digital forces of desire driven by the dissociated, illusory, externalised sense of self without environment. Biesta calls this type of re-mediated approach and effort ‘world-centred education’. In order to expand its potential, especially from being registered as a hegemonic reading of a singular world-perspective, let us call it a worlding-centred [see EXPOSÉ, c.(G) & c.(B),] approach that may produce ample remediations for manifold worlds and their margins. It is by enacting such effort to foster such spaces and places, as affective infrastructures for engagement, that we may nurture a more prescient and genuine ‘public’ experience between our selves and the environment, allowing to introduce relational, associative forms of learning.
Worlding-Centred Education that reflects through Propædeutic Space

Such kind of worlding-centred approach is akin to the way I install social pedestals. But the way social pedestals have evolved in that manner, often discretely as teaching projects, has occurred unintentionally. Surely, teaching and learning is always a core interest (something I attribute to my own Latin American education), but I had not been able to formally reflect on such matters of institutional pedagogy, and of worlding until this recent reading of de la Cadena and Biesta (or of bell hooks for that matter). That said, I have, and continue to strive to play with such procedures and dispositions towards facilitating support structures as sculptural forms of contexts and politics, rather than enforcing a predisposition to instruct ‘learning outcomes.’ I do this so to provide circumstances for encounters and collectivity to take place through the pedestals themselves, not as objects, but as environments of object-relations. In that manner, they tend to offer a concerted approach to pedagogy, displaying the kind of worlding-centred potential for learning, for asking, perhaps – what is desirable?

Ever since I first organised Verde que te quiero Verde: a seminar in Public Art in Kabul, Afghanistan in 2006 [see LIST... pp.80-3], I have been looking for spaces and contexts that address such real-time practices and circumstances for dis-play. I believe such approaches offer potential perceptions and learning procedures that go beyond what I may project for a course’s ‘intended outcomes’ and that puts those who engage the work (including myself) in situations that require unscheduled negotiation and resolution. This occurs amongst the group, towards actual physical material decision-making - towards political and aesthetic negotiations. I have organised such course-work – independently, collectively, and institutionally – by gravitating from the actions required to build such support structures, say, infrastructures for organising exhibitions and installations as research methods that lean-on, and may challenge, the pedagogical formats I employ and their potential to be ‘experimental systems’ [see c.(G).]. By requiring the group, collectively, including myself, to have to work with one-another, particularly to compromise
on decisions and resources, is a process that always leads, fearlessly, to the risk of conflict, and (almost always) a need for articulating unforeseen relations and resolutions. This is because I believe that nurturing the commonality that emerges from becoming ‘skilled’, not just in the skills of projecting perceptions, but in the skills of confronting conflict and negotiating resolution, as an experimental staging, a potential ‘scenography’ that allows for proportional divergences for confident identities to take hold – practical or otherwise.

These convictions I have accrued, and put to practice, as processes of researching alternative ways for learning, have been significantly influenced by Lina Bo Bardi’s *propædeutic* [see c.(F)4]. This is not just limited to my profound admiration to the physical and material forms in which her art, scenographic, curatorial, industrial design, architectural, and institutional projects in Brazil have manifested. It is also, quite succinctly, the critical theories and procedures she bestowed upon us to challenge the putrid problems caused by the interior/ exterior binary chasm…indeed in relation to re-mediating the Western, technocratic ruptures of epistemicity and the environmental and social disasters of industrialisation. Her notion of *propædeutics* reticulated a highly-hybridised form of art, cultural, and spatial practices that curiously and committedly intersected nature, spiritual culture, recovered materials, collective labour, and public pedagogy.

(Fig.78) View of temple to Temba (Nkisi or divinity of time) at the Terreiro (sacred medicinal garden) of the Angolão Paquetan nation, Salvador da Bahia, Brasil. Source photo: Berrios-Negrón.
That trajectory spanned well beyond architecture [with appreciation for buildings, among many others, such as her own residence Casa de Vidrio (1951), as reviewed in c.(F)₃] into her less-known, yet, in my opinion, ever-more important work as curator, scenographer, display designer, community and institutional worker. Through those other practices, she looked to foment diversity and empowerment at all levels of society, particularly beyond that of the privileged classes.¹⁹⁵ Surely this was crucial in her efforts to dismantle the incongruent privilege paid to ‘interior space’. This could be attributed simply to the influences of, for instance, Oscar Niemeyer and Burle Marx who would collaborate to produce architectures that would be, well, ‘open’ to nature… where the architecture would incorporate itself with the landscape, both as an environmental and a political intent that would define the specific identities of South American and Caribbean tropical modernism.¹⁹⁶ And that may be all good and great, if for no other reason that it would encourage, non-metaphorically, the breaching of interior and exterior space fallacy. But Lina’s trajectory was different; more nuanced.


Hers was one that, departing from her *propædeutic*, and a career growing in recognition, would be marked by the period where Bo leaves São Paulo in 1958 to accept an invitation to design (and direct) the Museum of Modern Art of Bahia in Salvador (MAM-BA 1959–63). While her building career is making great leaps, no less also with the coveted, parallel commission to design and build the Museum of Art of São Paulo (MASP, 1957-68), this move to the northeast of the country intensifies her awareness of colonial and environmental concerns (particularly in her learned relations to the Afro-Caribbean religions and mythologies of Bahia). The move also intensifies her interests in theatre scenography, a practice that she had begun to experiment with in São Paulo, one she was surely passionate about. The combination of these intersecting skills and understandings seems to have encouraged a more distinct set of potentials than those predicated by Tropical Modernism.

Already conscious of influential tendencies – not just about the impact of

Marxist and Soviet epic theatre, namely by Brecht and Meyerhold, as well as with the expository practices of Frederick Kiesler's "methods of spatial exposition" – Lina would take a long step further when she would also become herself part of the institutional frameworks of the buildings she would design. She would expand the scope of her own responsibilities to include programmatic and scenographic aspects, so to set them to serve as infrastructures for cultural engagement, explicitly, for the public education programs of said institutions. That is the reason why we see, from that point-on, particularly in her public-cultural works, a spatial and programmatic distribution that equally celebrates learning, gathering, displays, furniture design, practical workspaces, and nature in most if not all of her public buildings. That type of broadened agenda with public engagement, in her role as director, organiser, activist, scenographer, and curator is no better exemplified than by the MAM-BA at its Solar Unhão where she ultimately develops, with artist Juarez Paraiso, programmable spaces (oficinas) dedicated to teaching crafts and activism.

(Fig.81) Workshops (oficinas) of Solar Unhão by Bo Bardi and Juarez Paraiso for public teaching of art crafts, Museum of Modern Art of Bahia. Source photo: Nelson Kon/Inst. Lina Bo e P. M. Bardi.

Bo’s effort to create these adjoining worlds of spatial propædeutics was very much an act of facilitation, for open scenographic spaces for ‘living’

display, as performance, not in the strict theatrical sense, but for civic space, as museum, to be a place dedicated to a kind of daily life that was representative of the social make-up of the Bahian region. These truly civic spaces served deliberately as democratic sites for acting upon further operative and political realities. And, when intersected through her writings, in hindsight, it becomes clear her tactics and strategies were deliberately aimed at disrupting the burgeoning habits of the ruling classes to preserve old colonial habits, and to exploit the rise of neo-colonial industry and ideological technocracy, before, during, and after Brazil’s dictatorship. Under that duress, given her political ideologies, she had to leave Bahia, returning to São Paulo, still staying in the country keeping a low-profile (as opposed to many of her colleagues who left Brazil). Under that threat of persecution from the dictatorship 1964-1985, she turns again to scenography, working mostly with José Celso Martínez at Teatro Oficina, a skillset that served her well so to survive while being away from the more exposed politics of architecture commissions.200 Towards the end of that period, she wrote in her excellent manifesto Tempos de Grossura [In times of irreverence (my translation), written in 1980] that

Regeneration through art, the Bauhaus creed, has shown itself to be mere utopia, a cultural mistake and a tranquilizer for the consciences of the privileged. The metastasis of its uncontrollable proliferation carried with it the basic conquests of Modernism, transforming its great fundamental idea – planning – into the utopian mistake of the technocratic intelligentsia, which drained with its failures, of ‘rationality’ as being against ‘emotionality’, in a fetishism of abstract models that consider as equal the world of numbers to the world of man. If the problem is political-economic, the task of the ‘actuator’ is fundamental over and above all else. It is the impasse, what Brecht called ‘the capacity to say no.’ The artist’s freedom has always been ‘individual’, but true freedom can only be collective. It is a freedom aware [ciente] of social responsibilities, which can knock down the frontiers of aesthetics, knocking down the concentration camp of western civilisation; it is a true liberty connected to the limitations and the great accomplishments of Scientific Practice (not

of technology decayed into technocracy). The romantic suicide of non-planning, as a reaction to technocratic failure is something we urgently need to counter with the great task of Cultural and Environmental Planning.  

She would call this problem ‘scientificism’ (which I'd say refers to as technoscience), a claim that we can, again, trace, consistently, to her propædeutic, precisely keeping to her courage, to challenge and depose the recalcitrant modus of class-based superiorities purported by European and North American forces that continued (to this day) in an ever changing ebb and flow of class struggle in Brazil. But once that particular, awful chapter of dictatorship in the nascent history of this important South American nation, Lina wastes no time to embark in what to me would be her most ambitious and comprehensive project, the SESC Pompéia in São Paulo (1977-86), which, again, she designs, builds, and later directs. The SESC becomes the culmination of a career dedicated to encouraging and producing working prototypes carrying the kinds of aspirations that an affective and effective cultural infrastructure can provide.

It is through the bulk of her career that we see a recognition of the entrenched, undesirable effects caused by the often-contradictory cultural and environmental blinding that comes with the problem of ‘scientificism’, of technological conflation of consumer economy and scientific representation. Bo Bardi undeniably explored those challenges through comprehensive spatial and operative languages. And as we contextualise her work and theories today, we find valuable clues as to how the breadth of her spatial propædeutic provides worthy passage-ways to these seemingly neutral, but duly contextualised middle-grounds that can re-mediate socio-environmental relations, physically, mentally, spiritually, with and beyond the human. And that is why Lina’s ways of researching and practicing the inseparable relations between scenography, display, pedagogy, and the environment do set reliable precedents for artistic research and for spatial production that continue to be of significance.

(Fig. 82) Vision Machine sketch of nerve tubes behind rotating mechanism, by Frederick Kiesler, Pencil on paper, New York, 1937-41. Source: Frederick and Lillian Kiesler Private Foundation Vienna.
Breathtaking Greenhouse Parastructures

(Fig. 83) Second floor of Civilização do Nordeste curated by Lina Bo Bardi at the Museum of Modern Art of Bahia 1960. Photo Armin Guthmann. Source: Instituto Lina Bo e P. M. Bardi / Casa de Vidrio.
(Fig. 84) Exposição Bahia at the Ibirapuera complex by Niemeyer and Marx, for the V Biennial of Art of São Paulo. Exhibition curated and designed by Lina Bo Bardi with the director of the School of Theatre of the Federal University of Bahia Martim Gonçalves, September 1959. Photo Miroslav Javurek. Source: Instituto Lina Bo e P. M. Bardi / Casa de Vidro.
(Fig. 85) Scenography by Lina Bo Bardi for Ópera dos Três Tostões [Die Dreigroschenoper von Bertolt Brecht 1928] directed by Martim Gonçalves for the Teatro Castro Alves, 1960. Photo: Armin Guthmann. Source: Instituto Lina Bo e P. M. Bardi / Casa de Vidro.
(Fig. 86) Main floor of Civilização do Nordeste curated by Lina Bo Bardi at the Museum of Modern Art of Bahia 1960. Photo: Armin Guthmann. Source: Instituto Lina Bo e P. M. Bardi / Casa de Vidrio.
Breathtaking Greenhouse Parastructures

(Fig. 87) Workshops (oficinas) at the SESC Pompéia in São Paulo by Lina Bo Bardi 1977–86. Source photo: Nelson Kon (with permission of Instituto Lina Bo e P. M. Bardi / Casa de Vidrio).
(Fig. 88) View of main stage of Teatro Oficina in São Paulo by Lina Bo Bardi 1980–91. Source photo: Nelson Kon. (with permission of Instituto Lina Bo e P.M. Bardi / Casa de Vidrio).
These kinds of precedents to alternative, performative, sculptural, and spatial problems of public engagement and learning, clearly become a recourse towards art as research [see c.(G)6]. And given that research in the fine arts, crafts, and design practices are still-burgeoning and plastic, I would argue that Lina's general oeuvre, especially that hybrid of hers that is rooted in Brecht's and Kiesler's theatre and exposition-making, respectively, may indeed be revised and re-implemented. In doing so, we may identify unforeseen intersections in the present complex of the physical, and the digital, to explore the social as environmental form for art and spatial studies beyond those human purviews. By experimenting-with, and reflecting-forth her propædeutics, we may find yields, contemporaneously, of affirmative manners in which to aid in encountering and differentiating the unforeseen, spectral confusions between mental, physical, technical, digital and environmental blurrrings. This is particularly true if one were to revise Lina's work itself as an experimental system, and as a re-mediated phenomenotechnology, to probe the social construct of sculptural and installation work in art – ranging from dematerialised to post-conceptual genres.

So before laying out my own trajectory on how I have indirectly followed Lina's work as experimental system, I would like to point you to visit the documentation of Memory #04 of the Anarchive, serving as a workshop from which the installation component of the PhD emerged.

For more on Anarchive Memory #04 see the Intransitive Journal at [http://www.intransitivejournal.org]
Turtle
the archive
Turtle
the player

The precedence of my phenomenotechnological deposition of ‘greenhouse’ can be traced to the winter of 2005, when I submitted my Master's thesis project, titled The Turtle. As a ‘war machine’ 202, was figuratively a sarcastic addition to the metaphorical farm of animals the discourse of architecture had been accumulating since the late 1960’s (i.e., the ‘duck’ by Denise Scott Brown and Bob Venturi, the ‘fish’ by Frank Gehry, and the ‘rabbit’ by Mark Goulthrope). Formally, it was thereon proposed ‘as affirmative equipment for MIT’s cultural infrastructure’ [see LIST... pp.59-65]. Not unlike the qualification here before you (considering the test installation Neganthropic Anarchive, see POSTSCRIPT), the Turtle was also a self-motivated 1:1 scale experimental installation and interrogative design work. Through it, as mobile, archival, and display work, I looked to research and experiment with public art and transdisciplinarity, as well as with digital fabrication and ecological design from the perspective of – and as critique to – contemporary practices of technical and theoretical architecture. I was generally influenced by my teachers Muntadas, and Joan Jonas, with a strong predilection for interventionist art and interrogative design practices brought to my attention by my thesis advisor, Krzysztof Wodiczko. It was then that I began to research experimental practices that interfaced with political resistance, display, and social support structures. Eventually, I arrived at, and became influenced by, the realised and unrealised display works of Frederick Kiesler. I was already then familiar with his work, especially the influential ‘Endless House’. But I was drawn closer to him once I found one of his ‘vision machine’ sketches.

202 Reference to Turtles being ‘war machines’ as part of study of Krzysztof Wodiczko’s ‘critical vehicles’ and Deleuze and Guattari’s Nomadology: ‘...offering the Turtle to M.I.T. as a war machine is my contribution towards configuring more opportunities for cultural micropractices where the effect may be socially transformative innovation. The Turtle hopes to serve as an unfinished emblem, as a reminder for amplifying our field’s mediation, for the sake of intersection, of radical mediocracy, between all its citizens, local and global, and its disciplinary groups.’ see Berrios-Negrón, Luis. The Turtle: An American School of Architecture: A Radical Mediocracy (Massachusetts Institute of Technology, 2006. dspace.mit.edu, https://dspace.mit.edu/handle/1721.1/34649) 94.
I was entranced by the ghostly figure floating between the object on display and the mind’s eye of the viewer. It seemed a succinct depiction of the entire question of perception – arguably of the core-concern of sensation, consciousness, and experience that so intensely polemicizes the discourses of philosophy and of the history of science. Kiesler’s sketches are surely a reduction on all accounts, especially the way in which it takes the metaphor of ‘cathode/diode’ circuitry as binary analogy of the more complex synaptic connections that operate neurochemically (as proposed by Ramón y Cajal forty years earlier). That synaptic phenomenon and metaphor Kiesler visualises and illustrates becomes the driving force of his work. For instance, in his opulent display design for Peggy Guggenheim’s Art of this Century gallery, which opened on the 20th of October of 1942 (Fig.77), it was clear that Kiesler had an aggressive approach to the way in which art was to be enframed, largely challenging the so-called autonomy of the artwork. But that semi-permanent display-scenography – which ranged from partitions and framings, to pedestals and chairs – was retrospectively formulated by Kiesler’s own
research and experimentation at his Laboratory for Design Correlation, founded at Columbia University in 1937.

(Fig. 90) Concept montage for the Mobile Home Library by Frederick Kiesler (unbuilt) 1938. Source: Frederick and Lillian Kiesler Private Foundation Vienna.

Maybe Kiesler was pre-emptively contrasting or further energising (with his ‘American’ version) the arrival of the modern-European movement towards the dematerialisation of art (and of display itself) as a challenge to the autonomy of art that, say, Yves Klein would put forth in La Spécialisation of 1958. But Kiesler clearly, in his own words, adapted the opportunity to ‘use’ art as a ‘positive’ test & control specimen to define and experiment with his broader idea of ‘correalism,’ where what he called our ‘total environment’ \(^{203}\) [in contrast to Bo Bardi’s ‘total-space’], see TERMS of c.(F)\(_4\) would define the ‘tools’ man creates as the ‘correal’ manner in which to ‘increase [his] control of nature.’ \(^{204}\)

I was not then (as I still am not now) very interested in either the negative/subtractive or positive/positivist specifics of why humans strive to

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‘control’ nature (especially if such pursuits digress us back to the other precipices of instrumentality and equipment). Nor am I necessarily so interested in the specific elements of the correlational, the transcendental, or the absolute that have been so aggressively revised recently by the players of speculative realism, OOO, or others (Meillasoux, Harman, et al). Not that those threads have any relevance, but instead I would like to try and focus on the concrete, the relational, and the collective dimensions of perception occurring at the human scale of physical sensation, perhaps to challenge the anthropocentricity of ‘ergonomics’ – as well as around what conditions the percept – as the moment C.S. Peirce proposes to be that which leads on to perception.

That is, I instead simply took it upon myself to research, revise, and ‘re-realise’ Kiesler’s own proposed (but unbuilt) Mobile-Home-Library of 1938, as my own interpretation, infrastructure, and point of departure to my future practice. That interpretation became the Turtle. The first Turtle, as my master’s thesis qualification, would later become a decade-long series composed of six iterations. Those iterations are:

- **Turtle Two** – initially for the *Urban Customisation Workshop* of 2009, an exhibition about alternative fabrication practices that travelled from Berlin to Hamburg to Munich, and which I co-produced. Later, the Turtle Two was reinstalled for the *Future Archive* exhibition of 2012, at the Neuer Berliner Kunstverein, curated by Ute Meta Bauer, which dealt with the history and legacy of the Centre of Advanced Visual Studies of MIT (CAVS);

- **Turtle Three** – initially commissioned in 2010 by the online crafts market ETSY for their European headquarters in Berlin, the Turtle Three was later reinstalled, and subtitled *Imaginarium*, for the *Examples to Follow* exhibition of 2011 at UferHallen in Berlin, curated by Tomorrow’s Thoughts Today, Goehler & Feireiss;

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Turkle Kompakt – commissioned for the Examples to Follow exhibition of 2012, at the Bauhaus Stiftung in Dessau, curated by Goehler & Feireiss;

Turkle Five – commissioned in 2012 as a permanent exhibition and event infrastructure and scenography for the AEDES Metropolitan Laboratory in Berlin;

Turkle Six – commissioned in 2014 as a permanent exhibition and event infrastructure and scenography for the Universität der Künste (UdK) Hybrid Platforms programme.

[see LIST… pp. 59-65]

Turtles are a mobile space and a system of modular, ergonomic storage units, transported by a larger mobile module. Their construction is usually based on recollected, repurposed, or recycled materials. The latter versions included mostly three types of wood variations, such as harvested Baltic birch plywood, OSB, and particle board, with recycled paper products, and some hot-rolled steel custom components.

In the case of the first Turkle (and of later versions), the storage cylinder/box module was configured to serve as a step, chair, table, pedestal, bar, shelf, stair, wall, etc. In addition, the cylinder/box may contain programmable features that work as lights, speakers, LCD screens, and specialised equipment containers. The larger module, which is built on roller-wheels, mobilises the system. It serves as a space-making device, and it functions as such whether full or empty. When empty, it can become a pin-up surface; stage-set; audiovisual service space; catwalk; DJ booth; A/V rack; projection surface; fence; shelf space; complementary surface backdrop for presentations; etc. As such, in contrast to most scenographic techniques, the Turkle units/systems leave no waste. For example, the Turtles Two and Three have had after-lives, temporarily and permanently, in exhibitions and institutions such as the Future Archive (curated by Ute Meta Bauer), or Examples to Follow (curated by Adrienne Goehler), or at institutions such as Deutsche Architektur Zentrum,
Program, District, Maker Lab, or Open Design City (at Betahaus), all of which are cultural centres in Berlin. Again, the Turtle concept offers modular capabilities in the form of discursive infrastructure for events, often blurring the boundaries between users and general public. The Turtles projected a relationship to the urban landscape, from brick to building, as scaled, customisable abstraction of the city. Not unlike a hippocampus, the behaviours enacted through the units’ respective, event- and site-specific installations, became encoded and traced, quite literally, onto the system, serving as memory to further understand how other versions of the unit could illustrate past environments as they then inhabit future events.

(Fig.91) Turtle Two displaying itself with the research materials of the history of MIT’s Center for Advanced Visual Studies, for the Future Archive show at the Neuer Berliner Kunstverein curated by Ute Meta Bauer, 2012. Source photo: Jens Ziehe.
As a recursive series of infrastructures, half of which are still in use or on display, the Turtles modules continue to operate by simultaneously demonstrating the works and interfaces of their respective audiences and adoptive institutions. What is constant to them as infrastructures, beyond their spatial and display functions, is their capacity to organise those tracings — as simultaneous organisms and organisations — of what constellates the compositions being displayed. That capacity offers diagrammatic potential to those who engage it. The diagram, as the organisation of contained research materials, reflects networks of relations that go beyond a standard shelving structure, fostering an indexical quality that is true to archival systems. Turtles are indexical in their referential capacity to the sources that inform the expository composition being displayed. But more specifically, they carry an epistemic potential that was conceived while already considering the Peircean notion of index: a ‘pointing-to’, as a representamen, to potentials for speculation [see c.(C)1]. This latter, speculative quality for potentializing the act of pointing-to was the core programmatic dimension of the series. It is the quality that goes beyond what each individual iteration of the Turtle may individually represent. It is their collective quality as a small, physical network that gives them the differential scale, and the quality of re-mediating between thing and substrate, as infrastructure.

(Figs. 92) Photogram from Tout Va Bien directed by Jean-Luc Godard and Jean-Pierre Gorin, duration 1h36m, 1972.
Drawn literally from a still of the film *Tout Va Bien* by Jean Luc Godard and Jean Pierre Gorin (1972, rel.1974), the sectional, diagrammatic building-cut through the industrial meat ‘corporation’ has brought about the relational, intersectional quality that the first *Turtle* looked to potentiate [see LIST... p.93]. In the interest of reiterating that indexical and in-tersectional capacity, the first *Turtle* was not about serving my own work process, but about exploring an expository resolution of my colleagues’ work-processes (albeit my own would become apparent in an indirect manner as well). For this, I invited MIT colleagues Marie Law, Nick Rader, Mike Powell, and Nicole Vlado to consider what it would be to both process and exhibit their ongoing theses through the *Turtle*. It was a semester-long process through which they went about developing their respective projects, meanwhile I would meet with them for individual sessions that led us to make a ‘matrix of terms’. Eventually, the matrix began to represent what Mark Jarzombek (reader of my thesis, who later adopted the *Turtle* for his own studio) described as an *x-ray snapshot* of their own processes and practices.

And as the documentation of their research grew and evolved, so did their self-awareness about the work’s own content-related and expository decision making and potentials. Over time, the *Turtle* would support those involved – my colleagues, those evaluating the work, and me – to interface with the individual, and the collective materials generated; processual, associative, and spatial. It became obvious that such a process aided in establishing a common language that would allow for a comparative view of one another’s respective methodologies. And so, as an affirmative, cultural infrastructure developed by way of collaboration, the ‘wooden brain’ of the *Turtle* seemed not just to reflect the collective spirit as a curatorial tool, but also to serve as a prop that could aid in future, respective position-takings.

From that point on, the production and installation of the *Turtles* would operate as a reflexive method, more often than not, predicated upon the following general queries:

(1) How far could I foster the ‘social’ construction of sculptural form beyond my intent or predetermination?
(2) How much of that form could be presented by shared desires towards embodied forms of transdisciplinarity (in its actualised and performative manifest)?

(3) What kind of knowledge and material economy should I constellate, construct, and/or employ (ready-made) as a medium and type of archival form [see c.(A)₂].

That latter form – of archive – parsed through the triad of questions, kept informing decisions that played with the limits of my own control and intent. Of course, ensuing commissions for *Turtles* occurred in contexts that I deemed consequential. Generally, the work was about potentializing small-scale epistemic encounters and collective endeavours. But, I also looked to make visible underlying issues that either contend with labour and materials economies that directly or indirectly affect anthropogenic behaviours and the practices driving Global Warming. I did this with the *Turtle* series, but it took place often in parallel with my other experimental series, *Nonspheres* (2005–present) and *Immediate Archaeologies* (2008–2016) [see LIST... pp.80-5], which I strove to contrast one to the other as environments and infrastructures wherein collaborators and colleagues, as well as informed and uniformed audiences, were offered the potential to interface with objects and subjects – to constellate them as support structures, as display arrays, and as archival forms and practices.

The ‘archival’ dimension (archive as medium I mean, that indeed blurs form and practice) bourgeoned as a battleground for the differential and perceptual struggles I myself was having difficulty in contrasting: as digitalisation and the internet continued to quickly expand, climate change and resource exploitation continued to be exacerbated, and disciplinary practices and materialities continued to overlap. There was no doubt in my mind that these were all forceful remnants of the modern, post-modern, colonial and post-colonial tensions that were there, and still are, ripe for critique.
(Figs. 93) The diagram spread, produced for my masters work (2005), was a matrix of relations developing between my colleagues and I regarding each other’s work. The set of diagrams below the spread are constellations generated by a scripted applet that managed the matrices. Both studies were informed by the scene in Tout va Bien (film photogram above, Fig. 91), as well as by the ‘narrative structures’ of Mark Lombardi’s Global Networks drawings (1979-1990). The latter was what led me to explore how the shelving boxes of the Turtles would reflect diagrammatic, organisational, and indexical potentials as mobile infrastructure, archive, container.
In no small measure, the archive seemed to represent and display, by way of its very own analysis, the nature of such tensions. From early interventions that questioned the archive, taking his cue from Rosalind Krauss and from Michel Foucault, Sven Spieker argues that

‘…any assessment of the avant-garde’s attack on the autonomy of art – and specifically on the art museum – would be incomplete if it did not consider autonomy’s visual and cognitive corollaries. Modernist vision is often identified with an ideally empty, non-archival gaze, one that knows no objects and no subjects, described by Foucault as the “bright distant, open naïveté of the gaze.” To assess the avant-garde’s attack on this kind of nonarchival autonomy – which according to Krauss reached its apex in impressionism and neoimpressionism – is to confront a model of seeing to which the archive is relevant not as an ideally empty grid waiting to be filled with objects but as a place to which these objects return ready-made. In this reading, the untrammelled purity of modernism, its devotion to origin as an absolute departure, could function only to the extent that we marginalise the archive on which it is itself founded.’ 206

In my mind, that apparent desire for a ‘nonarchival autonomy’ is modernity’s most egregious fallacy. It is the feeble, profoundly irresponsible, and ultimately violently toxic demeanour of its privilege: of negating the ‘cognitive corollaries’ of the things that brought about the violent exploitation of the ‘exotic’ and of the ‘other’. As I worked on devising the Turtles, it is not that I was wholly conscious of such potent, post-colonial implications in regards to the historical, even historiographic loads that archives play in the construction of the past, and as invisible frameworks for shaping the future.

But I am confident in saying that…

…as a Puerto Rican with no classical education (obviously), and as a still-colonial subject to European-American imperial project…

…witnessing the geopolitical landscape that began to take hold after the Cold War, of fossil fuel and raw material wars, and of the ever-encroaching digitalisation and control of personal and biodata…

...well, let’s just say that I trust my instincts and intuitions, precisely because they are shaped by that weird colonial hybrid that I am, as a Caribbean islander, as a Puerto Rican. My particular hybridity has been nudging me to search for forms of sculptural and spatial production that may also display the insidious nature of those ethnocentric forces. Again, I was, and continue to be intent on not projecting my own crystallisations, but on looking to foster conditions for play, and dis-play, of the proportions of human perception, while working to precisely destabilise that petrified, objectified point of view, that seems to have been shaping, and enforcing one, privileged reality.

In no small measure, I am compelled to register how ‘play’ operates as potentially the most potent measure for altering, questioning, and/or destabilising the apparent, quiet supremacy of the archive. While analysing Andrea Fraser’s piece *Information Room* at Kunsthalle Bern (1998, landmark performance work, and accomplished artist whose mother is Puerto Rican), Spieker ultimately brings to bear how an aggressive form of playfulness becomes a potent interference to the ‘objectivity’ of an archive. He articulates that potency by pointing out that

‘Derrida proposed two ways of thinking about play. The first includes a stable centre or ground that enables play but remains itself ideally exempt from its effects (“a fundamental immobility and a reassuring certitude”), while the second lacks such a stable basis and is no longer invested in either history or hermeneutics. In the context of the archive, the notion of provenance — a principle that orients archival records toward a common origin, reigning in the free play of differentiation — clearly corresponds to the first type of play. Crucially, Derrida links this type to a compensatory mode that manages anxiety by presuming itself to be well outside of play’s reach, exempted and safe. Such is the position of the historian who enters the archive to confront its fragmentary holdings as if it were testimony to the paradoxical “presence of the past,” a presence that demands interpretation from a stable vantage — the historians — that is both inside and outside of the archive at the very same time.’

As such, ‘differential play and mobility’ can deliver degrees of curiosity, access, and association, as well as of certitude, exclusion, and disassociation. Their potential grew to be a crucial manner of method to the questions I had been asking myself, about what it would be to explore ‘display and interface.’ Therefore, of all the many curiosities and forces I looked to explore, it has been play and mobility that been energising my propensity to produce, often simultaneously, the mobilisation of ‘containers’, the play with surface ‘dis-play’, and thus the deposition of ideas of demonstration and support structures.

I gained experience by experimenting with concepts, techniques, and/or installations, thereon reflecting upon the environments they would constellate. That is how the production of, not just the Turtles, but of Nonspheres, Flying Carpets, Living Archives, Sleeping Archives, Threeing Rugs, Y-Tables, Anxious Props, came about; all non-chronologically leading me to collapse my efforts onto the building technology of greenhouses [see LIST… pp.78-129]. Perhaps that occurs because their dimensions, as indirect resolutions to the infrastructures that archives may represent, would offer different audiences differential perspectives on how to observe, and trace, their respective marginalities. It would not just be about what kinds of spatial and functional configurations would emerge, as they were often implemented, not by me, but by curators and other practitioners (particularly when it came to the Turtles)… but it would be more about the processes of engagement wherein I would ‘ask’ how the works foster ‘their own wooden’ desires and predispositions to display and facilitate interface, human and non-human.

I would understand if you would be sceptical, finding the Turtles to be neither sculpture nor installation, neither animate nor self-aware entities. But in no small measure, I claim to make evident that these works came about through strong consideration of post-human and trans-human concerns, where the artworks, when engaged, draw directly from interventionism, and more succinctly, from interrogative design. What emerges over time are seeming appearances of pragmatic solutions, readymade activations, and pieces of ‘social design.’ That ‘appearance’ is about pushing political and epistemic demonstration as a tactical blurring of the boundaries between art, design, and spatial production, and human-non-human perspectives, all hinging from that ‘functional’
strand for display (and dis-play). It is a tactic that at times does fail, but it ultimately loosens my formal privilege of intentionality in order to turn and facilitate a sincere entwinement with play; where those engaging the work, whether as objects, subjects, and/or actors are given the chance to foster their own relations and perceptions beyond any intent I may have projected.


This is not just a nod, for instance, to how Muntadas’ influenced my scope of practice with his On Translation series, which largely gravitated around the phrase “WARNING: perception requires involvement.” But, it is also another succinct nod to how Krauss’ notion of the ‘expanded field’ that has transformed the way in which not just the ‘place’ of sculpture operates in regards to perception, but how we perform and even inhabit the milieu of the site-specific artwork, and thereon how the broad expansion and disposition of object-relations allows the work to activate perceptual life with the environment.

Now, Marx would metaphorize the ‘table’ as thing, and ‘table-turning’
as act. Such act becomes of particular relevance, considering Marx’s claims that humans transform ‘Nature’ into commodity by way of the illusionary agency that commodity may bestow upon the privileged. In *Capital*, Marx states that

‘It is as clear as day, that man, by his industry, changes the forms of the materials furnished by Nature, in such a way as to make them useful to him. The form of wood, for instance, is altered, by making a table out of it. Yet, for all that, the table continues to be that common, every-day thing, wood. But, so soon as it steps forth as a commodity, it is changed into something transcendent. It not only stands with its feet on the ground, but, in relation to all other commodities, it stands on its head, and evolves out of its wooden brain grotesque ideas, far more wonderful than “table-turning” ever was.’ (my emphases)

This passage, in which Marx abducts the ‘table’ to be the place-holding metaphor and master sample of commodity fetishism, is footnoted by the statement, ‘[o]ne may recall that China and the tables began to dance when the rest of the world appeared to be standing still — pour encourager les autres [to encourage the others].’ That collapse of distance, motivated by Marx’s yearning for revolution, was aimed at associating the Chinese Taiping Revolt and its ‘table-turning’ to the (contradictory) moment where the European aristocracy, aloof to said revolt, was becoming entranced by modernity — an analogy to the phantasmagoric séance, in which the table served as the master-prop for the scenography of calling ghosts and spirits (i.e., *table-turning*).

Is it from those ‘wooden brains’ of the tables (and of *Turtles*, etc.), in the aloof state of the aristocracy — and from the distant symptoms of revolution — that the ghostly ‘spectre’ of communism came to be demonstrated? Perhaps. But the point is that the table, the display, the surface, and its ‘plane of immanence’ are here to be folded inside-out… not as a binary, but precisely unfolded as that *triadic* Peircean *precept* that I associate to the array of relations of *environmental form* [see c.(C)].

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It is no longer about dividing author from audience, or object from subject, or the interior from the exterior... but about duly revising the semiotic ecologies of firstness, secondness, thirdness; sense, reaction, interpretation; icon, index, symbol... all in committed post-human and more-than-human terms. That is the playful datum from which I search to install social pedestals (as far as possible, without succumbing to fallacious claims of neutrality). Through them I look to challenge intentionality and collectivity, responding as environmental and sculptural purviews to dematerialised, relational, conceptual, decolonial, post-human, and post-conceptual practices. That is how the social pedestals’ nonlocal site-specificity may be described, and how they may be reflected against more contemporary notions of ‘infrastructures’, ‘preparations’, and ‘naturalisations’.

Not the anxious object but the Anxious Prop

My push arrived at a new pivot-point in 2009. That year, as a reaction to a collective participation in the Urban Customisation Workshop (a traveling exhibition for which I was commissioned to produce Turtle Two, which later, retrospectively, became Case 1), the Berlin-based collective Anxious Prop (AXP) was initiated. The group – Fotini Lazaridou Hazigoga, Elín Hansdóttir, Patrick Kochlik, Miodrag Kuc, Dennis Paul and, a bit later, Leah Whitman-Salkin and Jan Bovelet, and I – came together as we all looked to expand our interest in alternative practices of collaboration and their attendant support structures and infrastructures. This was all guided independently, without institutional support, by our own individual interests, with the goal of enacting a recursive format of exposition. This format was always manifested as a one-day event, combining exhibition, performance, and/or workshop, along with a limited edition print publication, or feuilleton of about 300 exemplars free on site for the public (and still freely downloadable online at www.
Our expositions came about by invitation from another group or institution, ending with a total of four one-day interventions in Berlin. These were titled:

- **Case 2: [Eccentric]**, at Splace Alexanderplatz (29.7.2010)
- **Case 3: Black Swan Issue**, at Salon Populaire (04.10.2010)
- **Case 4: Reviewing Making-Visible**, at Stadtbad Wedding (30.3.2011)

On the masthead of Case 2 (at the temporary projectspace ‘Splace’ unter Fernsehturm in Alexanderplatz, organised by Antje Majewski, et al.), our editor Leah Whitman-Salkin opened the publication by quoting Döblin’s *Berlin Alexanderplatz*, and by pointing to the *prop*:

> “Well, that’s fine, let’s talk about the moon, now.”

Conceived as a feuilleton – an autonomous addendum – this publication acts as a spherical launching pad for proposals produced by a loose-knit group of Berlin-based practitioners, brought together by Luis Berríos-Negrón to wade in the territory of the term “prop.” The divergent works included in the publication have emerged from on-going discussions surrounding the term (as object; as sign, signifier, signified; as gesture; as tool; as support). Additionally, there are contributions to the feuilleton that were produced by those outside the core collaborators. These auxiliary authors, as well as those in the group, were asked to consider the topic for the first time, applying their knowledge base to this indefinite, amusingly problematic term. These initial probes, like the publication itself, are props – property, propeller, proposition – to be enacted by you, the reader, the seer. So, read, and talk about the moon.”

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Those registers of the theatrical object, as ‘prop’ that I put forth to the group, as datum to our collective curiosity, were based largely on a passage of my introduction to Case 2. I here take the liberty of sharing a portion of that text (pp.8-9):

“We [AXP] believe that the moment the broad agent that is the artist-actor sets off the environment of a performance, the phenomenon of ostension, as the “de-realizing of a given object in order to make it stand for an entire class” takes place, and that this phenomenon often expands on through to the audience. This broad, boundless deployment has been described as semiotic bootstrapping where “the principle of semiotization seems an unavoidable corollary of any theatrical event.” The amplified event has resulted in an ontological terrain-vague, an unfettered reprocessing of meaning leaving behind a wasteland waiting to be revived. And, unafraid of its potential lack of purity, it is the “fluid-continuum” between the object and subject that can only and genuinely occur through the tertiary “action-force” exerted by an actor. In this broader context, we therefore can provide fruitful self-examination in cultural practice. This temporary, fluid deployment is of concern to the group [AXP] for it can foment an unsteady field of self-inquiry, and even open possibilities for destabilizing the fetish of both art and neoliberal modes of production […] The destabilizing, unsteady notion is our “anxiety” that projects a search to amplify the delectable world of the artist-actor, the one that lives in the anxious network that persists without a sure identity. Let us affirm the status of autonomy beyond loosely co-authored modes of production as this ongoing effort aims to stimulate the prop as device to challenge this fuzzy interstice generated through the long-drawn action of collectivity.”


9.9 Chair with velvet upholstery, August Kitschelt, Vienna, 1851 (top).
9.11 Variant of the cantilever tubular steel chair, Marcel Breuer, Bauhaus, 1928 (top).

(Fig. 95 & 96) Scanned spread of pp. 298–9 from The Dialectics of Seeing by Susan Buck-Morss, 1991. Source: MIT Press.
(Fig. 97 & 98) Centerfold of the Case 2 feuilleton by the Anxious Prop (pp. 24–25), Cocaine Chair Model, 2010 (left, Photo: Berrios-Negrón) and photogram of film The Unpolished [Die Unerzogenen] directed by Pia Marais, 2007 (35mm, Source: Pia Marais). The centrefold cuts in the middle of the essay contribution Epistemic Objects / Technical Objects (pp. 21–28) by Hans-Jörg Rheinberger.
The collective self-reflection on how ‘props’ expanded the valuable, performative aspects of object-relations, indissoluble from the subject and the environment, led us further to consider what would the role-play of ‘observation’ be, especially considering both the blurring of art and science, science and technology, as well as the blurring between the physical and the digital.

That is when the opportunity to work with scientist and philosopher of science Hans-Jörg Rheinberger came about. Our exposure to Rheinberger’s work – mostly celebrated for his philosophy of experimental (scientific) practice, one based on his extensive experience working in laboratories as molecular biologist – also provided a historicised notion of Western epistemology which became the groundwork for his book, *An Epistemology of the Concrete: Twentieth Century Histories of Life*. That groundwork is conditioned primarily by his brief profile of the contributions that Ludwig Fleck and Edmund Husserl made towards the historicity of scientific knowledge, and of Georges Canguilhem’s formulation of epistemological history, both seeming to gravitate from Rheinberger’s summation of the concept of phenomenotechnique [translated to German as ‘Phänomenotechnik’] by Gaston Bachelard.

It was AXP case co-director and comrade Jan Bovelet who, having just finished working on the translation of the *Epistemology of the Concrete* book for Rheinberger, invited me to Rheinberger’s office at the Max Plank Institute in Zehlendorf, during the very last days prior to the latter’s academic retirement. There, surrounded by mountains of text materials, several scientific specimens and artworks, he told us that he had been working, for a decade or so, on a concept related to ‘exhibition’ that he called ‘epistemic things’. He explained, in passing, that it was based largely on Bachelard’s ‘Phänomenotechnik’.

During our conversation, he brought to our attention that a year earlier, in 2008, he was a principal contributor to a conference titled *The Exhibition as Product and Generator of Scholarship*, which was held from the 27th to the 28th of November at the Deutsches Museum in Munich. Organised by Susanne Lehmann-Brauns, Christian Sichau, and Helmuth Trischler, along with the coordinator of the Max Planck Research Network ‘History of Scientific Objects’ Hannah Lotte Lund,
they invited a number of experts, namely Martha Fleming, Robert Bud, and Rheinberger, among others, to openly discuss the re-burgeoning epistemic interstice between observing art and observing science. The core concern of the conference was to explore how that interstice impacts the promotion of research, of epistemology, and, generally, of knowledge production in cultural practices. On their introductory remarks, the organisers put forth several initial hypotheses so to unpack a series of potent questions:

‘If exhibitions do more than merely visualize the results of research, and if they have the potential of stimulating scholarship and generating knowledge by posing new research questions: How can researchers take advantage of this opportunity? If spatial arrangements form a core part of exhibitions: How can scholarly arguments be translated into such spatial arrangements? If exhibitions are based on objects put on display: What exactly is their role for the argument presented?’

They go on further to ask:

‘Recent history of science and technology has intensively interrogated the epistemic quality of these material sources of research. Yet, how do the objects unfold their properties in being staged for exhibition purposes? If exhibitions, at least many of them, have a limited lifespan: How can the arguments put forward be kept for future reading and citing? Further, unlike for printed texts, the traditional publication media of scholarship, common standards of terminology and argumentation for exhibitions have yet to emerge. How might the results of the scholarly examination of an exhibition look like?’ (my emphases) 214

We (AXP) found that all these questions made for excellent provocations; they would be especially pertinent if we were to take to heart how art indeed challenges and contributes to observation, research, and experimentation. We would consider the questions in their own general

and disciplinary evolutions, and as contributions beyond the conventional and exhausted formats of research and development, as R&D, and within the Arts & Sciences. To us it seemed quite curious that Rheinberger, whose disciplinary experience and subsequent observation work was almost strictly dependent on cutting-edge visualisation technologies, opted to channel his questions through a discursive inquiry into the disciplines of history and philosophies of ‘experimental systems.’

With that, let’s first review the term ‘phenomenotechnique’, as defined retrospectively by scholar Mary Tiles:

‘Bachelard insists on the one hand that the phenomena of contemporary science are products of experimental techniques and methods of preparation (whether of the object of study or of the data recorded); they are not naturally occurring phenomena which we just happen to observe, but are the result of our technological intervention (phenomeno-technique), so that what results is structured by the apparatus and methods used. On the other hand, he insists that scientific thought is a structured constructive activity manifest in the discourse of scientists. Experimental operations structure the phenomena, mathematical operations structure scientific thought….But whereas Kant assumed that the nature of the forms both of intuition and of judgement are fixed, Bachelard in his rejection of Cartesian epistemology, does not. For even in Kant the idea that the subject should be a possible object of knowledge to itself is problematic. If there is to be the possibility of knowledge of the subject’s own representational practices and their forms, then, since any such knowledge must modify the subject (himself), it must be admitted that there can be no fixed rational representational structure to be known.’

Then, let’s contrast that passage to Rheinberger’s own interpretation of Bachelard, as he frames it between Fleck, Husserl, and Canguilhem:

‘Visualizations constitute chains or networks of representation in which they refer to each other repeatedly. Insofar as they are the result of and dependent on different technologies, they form what

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scientists call “independent evidence.” The more closely they match, the more stable a finding appears to be. But it is also possible that one representation serves as the raw material for another. As Gaston Bachelard has remarked, the modern sciences are “phenomenotechnologies.” They bring their objects to manifest themselves in a process of construction. These manifestations cannot be separated from the technologies that make them possible.\footnote{Rheinberger, Hans-Jörg. Making Visible: Visualization in the Sciences − and in Exhibitions? (Edited by Susanne Lehmann-Brauns et al., vol. no.399, Max Planck Institute for the History of Science, 2008, pp. 9–23) 21.}

Drawn from these traces, for AXP, the ‘aura’ of the phenomenotechnologies generated significant self-reflections about what it means for us, as transdisciplinary practitioners, to enact, display, perceive, mediate, and demonstrate our works and collaborations within the breathtaking context of advanced capitalism and, by extension, of Global Warming. It particularly led to us reflect on that ‘constructive’ dimension of ‘reality’ as an implication that ‘findings’ can only be perceptually stabilised by a simultaneous ‘mutual instruction’ between phenomena, instruments, experiences, models, and methods that concretely circumscribe reality, endlessly, as a ‘social’ occurrence predicated by their own networks of relations.

It is perhaps that both Tiles and Rheinberger see, as do others, that Bachelard somehow anachronistically precedes and foresees the ‘social’ conflict that still continues to preoccupy the impure analytical and continental camps of philosophy. But personally, it is the contrast of mutual instruction that further energised my intuitions, particularly the intuitions that encouraged me to further experiment with ‘what’ could the act of potentializing epistemicity may mean, between the network of social reflections.

Now, I do not want to turn our walk into a lesson on constructivism. But let me admit that every place we have visited, and every thing that I have posed for you to sense so far, does – at least significantly – depart from the critical formats of constructivism that Mary Tiles and H.J. Rheinberger prescribe. It is from their dispositions towards articulating the ‘social’ in the phenomenotechnological context that will continue to
energise our stroll, and to provoke the questions that will accumulate and build themselves unto our evolving hypotheses. The difference is that, as we walk, we unleash, not just objects and technics, but methods and actions, as research and experimentation that have so far been entrenched by colonial pretexts, further compelling us to define our own ‘realities,’ even as we extend them beyond the boundaries of science onto art and everyday life.

Deliberating upon the pedestal’s specimen of the social

…thus the ‘social’ comes again across our paths [see c. (G).]… And there are still innumerable other related intersections to discuss and question. But, let's very briefly look at the following three descriptions that I feel create a worthy conglomerate: (1) Hanna Arendt’s characterisation of the ‘rise of the social’; (2) Jean Baudrillard’s claim to the ‘end of the social’; and, more recently, (3) Tiqqun’s claim, which does echo the end of the social, but as the ultimate, deplorable culmination of the capitalist triumph as ‘socialisation.’

In two of her most significant publications, *The Human Condition* (1958) and *Life of the Mind* (1977–1978), Arendt develops her critique of modernity by framing it around several notions, including ‘the rise of the social,’ which demarcates the pervasive free-market economy that began early in the 18th century, and which expresses the ever-increasing accumulation of capital, and of social wealth. For Arendt, ‘the rise of the social’ is everything that has become an object of production and consumption, and of acquisition and exchange. And it is its constant expansion that has resulted in the collapse of all frameworks differentiating the private and the public, and even the social (as that thickening reproducibility) and the political. Arendt’s ‘rise’ is preceded and succeeded by other periods, starting with ‘world alienation’ which
refers to the loss of intersubjectivity between experience and action and their respective erosion, between our self-identities and sense of reality. After ‘world alienation’ and the ‘rise of the social’ comes ‘earth alienation’ – an idealised and practical escape away from the planet, ushered irremediably by technoscience, which attempts to recreate life under laboratory and extra-terrestrial conditions, overcoming our earth-bound misery by colonising outer space to extend our life-spans. It is the consummation of all that becomes ‘social’ for Arendt as ‘the victory of the animal laborans’.

Baudrillard, mainly taking cues from Heidegger and Debord, claims the ‘end of the social’ – a title-phrase that might suggest an opposition to Arendt. Actually, his concept coincides with her ‘rise of the social’ in that, for both, the social marks the loss of intersubjectivity. But for Baudrillard, the form of a ‘hyperreality’ is always already reproduced, and it is therefore always diffusing reality – an effect that, by extension, dilutes the social into a constant, seemingly unmediated mode of industrial-scale simulation. He states in *Simulation and Simulacra* (1994) that ‘[n]ever has culture lost its memory in the service of stockpiling and functional redistribution. And this translates a more general fact: that throughout the civilized world the construction of stockpiles of objects has brought with it the complementary process of stockpiles of people – the line, waiting, traffic jams, concentration camps. That is “mass production,” not in the sense of a massive production or for use by the masses, but the production of the masses. The masses as the final product of all sociality, and, at the same time, as putting an “end to sociality”, because these masses that one wants us to believe are the social, are on the contrary the site of the implosion of the social. The masses are the increasingly dense sphere in which the whole social comes to be imploded, and to be devoured in an uninterrupted process of simulation.’

Lastly, in their *Preliminary Materials For a Theory of the Young-Girl* (1999/2012) Tiqqun (and their Invisible Committee) state that the social is the reification itself of Empire – as socialisation. In contrast to Arendt’s and Baudrillard’s ‘rise’ and ‘end’ of the social, Tiqqun deliver their messianic decree of ‘socialisation,’ as neither emerging nor terminal, but as a consumed social, stating that ‘[t]he process of valorisation [and
exchange], in the imperial phase, is no longer simply capitalist: IT COINCIDES WITH THE SOCIAL. Integration into this process, which is no longer distinct from integration into imperial “society,” and which no longer rests on any “objective” base, requires that every person permanently self-valorise. Society’s final moment of socialisation, Empire, is thus also the moment when each person is called upon to relate to themselves as value, that is, according to the central mediation of a series of controlled abstractions’ (their emphases). The character of that ‘integration’ or ‘central mediation’ is theorised onto the flattened being that is the ‘Young-Girl.’ The incarnation that results through her encoding (as binary digitalisation) is then recursively ‘indexed’ over and over again onto an ‘absolute transparency’, completely invisible to society itself, precisely because of Tiqqun’s claim that there has been a removal, a ‘disappearance’, or final decay of a comparative, ‘objective base.’

It is a truly dizzying exercise… to hold and understand the semantic resonances of the ‘social’ in regards to theory, ideology, party politics, urbanity, etc.; and, even worst, for its more recent compounding as ‘social media’. That is why I would like to take a less dire, but still threatening, approach to the significance of ‘social’. Not just because I feel it still is an overloaded placeholder-term that suggests the dynamic and potential confluence of meaningful relations, but also because it must be considered, in no uncertain terms, to stand for relations that are not limited to human privilege, i.e., that it should be wholly extended to non-human perspectives as well. I am aware that this is an interest and a value shared by many thinkers and practitioners today, and I’d like to associate myself to such milieu. But, that does not mean that I don’t have some reservations…

The ‘interest’ of articulating notions of the social beyond humans is well established in post- and trans-human discourse, notably by Actor-Network Theory (ANT). To that point, Bruno Latour, leaning on his review of Gabriel Tarde’s ‘Monadology & Sociology’, looks to clarify the position of their ‘pet’ ANT. He does this in regards to the ‘end of the social,’ disposing of the ‘social’ as terminal condition (as one that is also at its

218 Tiqqun (Collective). Preliminary Materials for a Theory of the Young-Girl (Edited and translated by Ariana Reines, Semiotext(e); Distributed by MIT Press, 1999/2012) 18.
In order to contribute to this volume on the “social and its problems”, I could have talked about what is known as “actor network theory”, or ANT, a deliberate attempt at terminating the use of the word “social” in social theory to replace it with the word “association”. But I have decided to share with the readers the good news that ANT actually has a forefather, namely Gabriel Tarde, and that, far from being marginalised orphans in social theory, our pet theory benefits from a respectable pedigree.

What I mean is, and please bear with me, is that the novelty of the social’s disposal and replacement is designed to sustain ANT’s reasoning by hinging from two important axioms I draw from Latour’s reading: (1) that the nature/society divide is irrelevant for understanding the potential ‘social’ of worlds of human non-human interactions; and (2) that distinguishing the hierarchy of scales implied by micro/macro stifle any attempt at understanding how the social may be generated. I deem both these axioms to be rooted in a hasty, Western, armchair, conventional, ethnocentric question that gives reason to the sceptics and naysayers to ask: ‘how can you impute will and belief to scallops, microbes, door closers, rocks, cars and instruments when it is always you, the humans, that does the talking?’. ANT’s worthwhile answer-provocation to the question, via Latour, is that the ‘things’ you speak ‘about’ are not just similar to you… they express through you a sort of difference that has you, the speaker, in possession of their ‘properties’, and therefore ‘speaking’ to us as their ‘proprietors.’ In this sense, ‘property’ and ‘possession’ (and their ensuing philosophies) suggest another way of talking about ‘translation’, doing so in ways that go beyond the limits of just human mediation. Perhaps reason why Latour so enthusiastically exclaims, to validate his pet ANT’s respectable pedigree, that ‘Tarde is heterarchic through and through.’

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That is all well and good. But, as much as I identify with the sentiment of these proposed perspectival adaptations, I find the premises of the two axioms problematic simply because, to me, they still unwittingly fail to ‘realise’, as self-reflection, that their effects are mere prolongations of (white, European) privilege that negate actual, transitional processes, even if the intent is to try depose perspectival privilege itself. Let me unpack that a bit.

First, I object to this ANT binary (that is also adamantly built on top of the inside | outside metaphor) because, well, denial is the worst of luxuries. To make the needed transitions – to fairly process-through the toxicities of the Anthropocene – it is imperative to continue to reflect, critically, on the binary logic of modernity - not to ignore it. To turn away from its lingering causation of violent divisions between nature and society is still an ongoing operation that precisely needs to be worked with and further elucidated (to stay with the trouble). Therefore, just walking-by or turning-away (a luxury that the vast majority of us do not have, hence the privilege) will just make matters worse.

Secondly, I object because to remediate the elusive, globalised, hegemonic scale-less-ness of these ethnocentric, binary forms, one must be able to carefully differentiate between scales of perception (precisely if one is to adeptly enact an affective form of trans-scaling). What I mean is that, to habilitate the transitioning-beyond privileged Western ways of 'seeing', the identifying of proportion and magnitude must take precedence in order for fair, diverging, and non-human forms of epistemicity take place. By stating claims such as

‘No one in human society can come and claim that, in order to go from one interaction to the next, you have to shift scale and go through a Society or any such Big Animal. Since for the only case we know well, human societies, the small holds the big, it must be the same, Tarde argues, for all the others, except we don’t have the slightest idea on how to reach the monad levels of stones, gas and particles without changing scales. We embrace them only statistically.’

221 ibid. Latour 2002, 123.
I sense that, although, again, I sympathise with the intent – in this case of striving to level the playing field of hierarchies, between the big and the small, the micro and the macro – I feel strongly that the intent does not recognise that its own facile nature. That such shifts make massive omissions (*no one* in human society?), and thus has massive consequences to those whom might have been affected (even erased and destroyed) by what you are shifting away from.

And thirdly, I am not able to completely submit myself to Latour’s answer to the naysayer’s ‘question’ (of *imputing will and belief to scallops, microbes, etc.*) because these specific ANT-forms of ‘possession’ and ‘association’ would still diverge us back to the colonial spectres buried and *naturalised* in our technical behaviours. The spectral violence, as mythical violence, that lurks in domination and property, is what returns us to the unproductive limits – not of the social’s new replacement in ‘association’, but – into the social dysfunctions of ‘dissociation’ driving us ever-more so deeply into the the exhausted and elitist strategies of dialectical opposition.

Please know that I am well aware of – and praise – the narrative, provocative, and persuasive approaches exercised by ANT members such as Latour, Kristin Asdal, and John Law, to name a few, precisely because their constellatory approaches do not rely, in my opinion, on either dialectical or binary models of opposition. And I am in no way suggesting that ANT consciously continues to foster colonial trauma. On the contrary, ANT is an extremely valuable movement and discourse for revising epistemicity, and for alternative labour materialities. But I must express my concerns, precisely because I do subscribe to their many valuable contributions, and thus feel compelled to point at the blind spots that may still be recognised.

Now, of those blind spots, we just visited, I would like to briefly revisit once more the second matter, the one that gravitates between them: **scale** [see c.(F)]. We could do so by returning to the claim made by György Kepes in *The New Landscape in Art and Science* from his new-founded, American perch in Chicago's New Bauhaus (1956), in which
modernity enthrals us in a ‘crisis of scale’ \(^{222}\) [see c.(C)]. We could do so as well by revisiting Marisol de la Cadena (Perú) and Eduardo Viveiros de Castro (Brazil) who offer modes for perspectival transitions, as acts that also concern scale, albeit through non-European, Latin American formats of divergence [see c.(B)]. But to keep our discourse focused on the European perspective, let’s look at how that crisis is ad-dressed, as a worthy exercise of European self-reflection, by Boaventura de Sousa Santos, who, most notably with his recent work, *Epistemologies of the South: justice against epistemicide* (2014), challenges the Western epistemological perspective.

One of the myriad ways in which this Portuguese theorist challenges that Western perspectival privilege is by defining a tactic he calls trans-scaling:

> ‘Since different knowledges privilege different scales of phenomena, the epistemology of seeing I am proposing here suggests that we learn how to translate among different scales. The limits of a representation on a given scale become more visible when we compare that representation with a representation on a different scale. Trans-scaling is thus a démarche that permits us to contrast limits of representation with the purpose of elucidating what is at stake in the choice among alternative criteria of relevance. Trans-scaling presupposes a certain unlearning of current criteria of relevance determination. It invites us to consult social reality through different cognitive maps operating at different scales. The learning process consists of raising the consciousness of the limits-contrasting representation with orientation, position with movement—without getting paralyzed by it. A higher consciousness of limits is at the core of the kind of prudent knowledge I am proposing here, a form of knowledge that teaches us how to keep consequences under the control and within the sight of the actions that cause them.’ \(^{223}\)

I certainly embrace the call to translate ‘privilege’ by differentiating


\(^{223}\) Santos, Boaventura de Sousa. *Epistemologies of the South: Justice against Epistemicide*. (Routledge, 2016) 161.
scales of phenomena, for it seems to be an approach that – within the extremes of sociopathic depersonalisation and hyperbolic politicisation – seems most adequate for fostering manners to ‘unlearn’. The depositing of reified epistemic procedures allows us to contrast the different cognitive proportions so to re-mediate them according to their actual, differing scales. The preceding, disproportionate entropy of polarisation caused by Western binary division can then be held and observed for what it is… that surface-strata of contrasting phenomena, as discernible palimpsest of traced surfaces, thus becomes a prescient metaphorical space for deposition and action. It is the potential of trans-scaling, to ‘consult social reality through different cognitive maps operating at different scales’, that empowers the skill that I, over time – as expatriated Latin American in Europe – have been able to retrospectively accrue. It is an applicable technique I have gained so to contextualise and install ocurrences, infrastructures, and spaces that precisely aim at deposing and dis-play perspectives and proportions of engagement; as modes of research as well as modes of pedagogy, occurring through my works of installation [see LIST... pp.57-129].

I have been driven not to provide reified sculptural forms as mediated materials, either physical or conceptual, but to facilitate support structures and conditions for which the precept of sculptural and political potentiality may be situated and encountered hands-on, a ‘learning process that consists of raising the consciousness of the limits – contrasting representation with orientation, position with movement – without getting paralyzed by it’ (as Santos above states).

And, with that definable and discernible tension between limits, positions, and orientations, let me take a step back, before you and I leap across. Let’s revise once more, just for a moment, the end of Latour’s essay on Tarde. In it, he concludes that Tarde gave way for ANT to claim that ‘possession is another way of talking about translation’. Delicately, as an instantiation of Santos’ tactic of trans-scaling, I would suggest to instead replace the passive ‘possession’ (of objects) with the active act of ‘demonstration’ (as a scalable type of observation and political mobilisation beyond the visual). I thus claim make the replacement, and paraphrase to read...
Demonstration is another way of talking about translation.

I used to talk about ‘demonstration’ simply as the act of showing something. And I extended that talk of demonstration to political gatherings of people, often with props, to physically, and even digitally, create resistance and mediate fair reclamation. But let’s go back a bit and try to review another use of the term. In the artistic research and pedagogy guidebook Education of Vision (1965), also authored and edited by Kepes, there is an essay titled ‘Conveying science by visual presentation’ written by Gerald Holton.

Holton refers to the term ‘demonstration’ as an activity traditionally performed by professors in the hard- (or wet-) sciences, and prepared by their assistants who were in turn called ‘demonstration curators.’ These are still known today as foundation-level teaching activities performed to display proof of evidence about natural phenomena – say, of physics, or of chemistry, etc. Most of these demonstrations first emerge as experiments that are then standardised by academic institutions into pedagogical props to be used by a skilled lecturer in order to enhance the students’ ability to perceive what Holton would categorise as the ‘levels of reality.’ Holton’s heuristic has seven levels that I find both a bit strange as well as compelling. For, although they may appear in a numbered order, he suggests that the ‘weak’ level is in the middle (the model), and the greater impact, say of greatest epistemic traction (i.e., experience and intuition) are the ones that operate at the (top / bottom) edges that adjoin, like a spectrum. Holton’s Levels of Reality in Scientific Presentations are:

1. Experiential reality;
2. Didactic reality;
3. Depiction of phenomena (motion picture);
4. Analogon (model);

5. Condensed coding (graphs, equations, words);
6. Metasymbolic abstraction; and
7. Unconscious apperception (or intuition).

(Fig.101) Doctor Syntax at the Royal Institution of Great Britain, witnessing a curator demonstrator. Source: Wellcome Collection. Public Domain.

We are not going to parse these levels, but I do put them forth in the hope that they can complement a possible typology of ‘Epistemologica’ we will soon encounter. I also put them forth because they can encompass a notion of demonstration that may let us think, for ourselves (as playing field), what ‘reality’ means (as medium, as mediation, and as remediation). That is because, as in the cases of perception, experience, and representation, it is quite the challenge to settle on a common – or any specific – definition for reality. That said, at that point of struggle, of conflicting definitions, lies the questioning, the ‘staying with the trouble’ – as Haraway requires – to work towards fostering diversified commons of human-non-human reality, perhaps where we can sharpen an alternative manifold practice of ‘demonstration’ away from property.

Two recent concepts that I feel complement and question this kind of
demonstration are; folk politics as well as the hyperobject. As far as folk politics, Nick Srnicek and Alex Williams identify this expression to be the ineffective force that has been driving the politics of the ‘left’, leaving it impotent to expand on the ideas of diversity against the steady encroachment of fascist ideologies (in the guise of neoliberal, neoconservative, and/or neo-colonial) of hegemony. In regards to the hyperobject [as we review elsewhere, see c.(F)_4 & c.(C)_1] Morton delineates a vast manifold of forces that shape a complex condition – i.e., of global warming, or nuclear waste, etc. – into a monstrous set of phenomena that disappears between intense proximity and remote inaccessibility, becoming sensationaly impossible to coherently perceive.

Now, the definitions of ‘demonstration’ profiled above [for political demonstration – i.e., of going out to the street to confront or support a public ‘reality’ – and for scientific demonstration – i.e., of presenting and representing physical ‘reality’] are directly challenged by the corresponding concepts of folk politics and the hyperobject. They each, respectively, challenge scale, perception, and the construction of environment through either persuasion and/or epistemic traction. In short, the way in which ‘political demonstration’ is restricted by the folk-political ideology seems to be, for the most part, ineffective due to its inability to mediate local potentials for an universal to occur (say, to create broad consensus about a specific item of discussion). Likewise, the ‘scientific demonstration’ seems to have become perceptually insufficient as we are breathtakingly saturated by the nonlocal, hyperobjective nature of cosmology and quantum mechanics… a sensation transferable to the fragmented hyperobject of the Anthropocene, the Capitalocene, the Ch-tulucene, Neganthropocene, and/or of the Sixth Extinction, ad infinitum – where we rampantly resort to abstract methods of empty metaphor and/or of retinal illustration… to model, quantify, predict, and project the complex intersections of reality, no less between climactic, geographic, and demographic data.

What is at stake here is the ‘critical scale’ of the ‘seeing is believing’ trope, and how it here splices and splinters. It becomes a fractured man-

ifold of perspectives that lack ironic distance from each other. As this contradictory kind of distancing happens, a disproportion of perception is what direly occurs, leading to the age-old complexes of illusion, invisibility, and spectrality. And that is precisely what the ironic, self-critical distance between scientific evidence and social construct needs to continue to be rigorously discussed and deposed. Such cautious, deliberate actions (not of the luxurious or facile privileged kind) is what will reveal these spaces from where the colonial histories, philosophies, and mechanics for perception may be engendered from other worlds and perspectives, especially in this present Post-ontological Age [see c.(B).]

And, yes. Utopic projections-as-solutions, say, by way of Latour’s topical speculation of...’as if we spoke to objects and let them speak for themselves’...could provide with much needed provocations and delights.

But from a Caribbean perspective, this is, at best, silly, if laughable, considering how indigenous and religious practices, across continents, across millennia, have practiced these very conversations – through play and rituals, over and over, again and again – with the ‘persons’ of the forests and with the forces of our environments.

So to go forth, a process of transition, not of blithe privileged side-stepping, but through and beyond Western ethno-and anthropocentric exoticisation needs to first to occur. And maybe then, we can begin to truly overcome the toxicities of the Anthropocene. What I mean is that neither you nor I live in the 23rd century (surely not my family nor my fellow Puerto Ricans, who do not have the luxury of basking in the sun of such luxurious speculations). So I am not quite ready to take such speculative sidesteps, of fantasising about level playing fields, when to do so abruptly leaves a massive amount of my fellow co-inhabitants, human and non-human, behind. All the contrary. The path ought traverse through that unsavoury history of violence, to remember to unlearn the colonial trauma, and to relearn the living practices of First Societies that have been systematically forgotten.

I just do not feel it is either responsible nor proportional. And, that proportion can only be registered by way of revised scales. Without some well-conceived acts, props, and remedies that can first lay the
groundwork for such necessary, transitional ‘turns’ to take place justly, proportionately, we are otherwise not quite ready to proclaim, nor do they, the North and West, yet deserve the ‘right’ to ‘possess’ anything that Latour claims for – not without first doing the very hard work of truly, carefully deposing colonial, ethnocentric privilege.

We are required to care-fully install environments that condition and fo-ment the questions – not the answers – that are to be perceived and ne-gotiated by persons, human and non-human, for themselves (including myself, through the very actions of this present technical stroll you and I are here engaged on). That is, we ought potentialize re-mediation away from the toxicities of modernity, and look to unforeseen vectors that actual, representative democratic discourse ought to foster. This dis-course must take place, especially along with non-human perspectives that must be not deterministically designed and reified at an instant, but initiated and deployed, patiently, over time. Implanted audiences with predetermined forms, even of the dematerialised and conceptual kinds, is squarely in the realm of tradition. But challenging intentionality and predetermination of form, by carefully ‘demonstrating’ contexts rather than stating their reifications, is how we bridge the chasms between hegemonic reality and what would seem to be unreachable diversity, all which are otherwise clearly proving to be detrimental to public discourse, and to the proportionate environmental recursion of life.

Don’t get me wrong. I do want to address that crucial question ANT puts forth:

‘how can you impute will and belief to scallops, microbes, door closers, rocks, cars and instruments when it is always you the humans that does the talking?’

That is because it is the question which is not necessarily to be an-swered. It is pursuing the nature of the question (not unlike how Marx characterised the table’s nature by its ‘wooden brain’ or, in my case, by ourselves ‘speaking’ to the glassy, mnemonic membrane [or men-brain?] of the greenhouse) that potentializes a myriad of other vectors that may challenge and depose anthropocentricity. What I mean is that the explo-ration of terms, props, and methods that dis-play potential perspectives
for commonality (where so many that have been hijacked by the ideological right, as well as by the ideological left), are crucial to re-mediate and depose the intentional forces that destroy our shared environmental forms (that undoubtedly include the so-called ‘ecosystem services’).
That is because they – our commonalities, as persons in their own right – are the sites of absence, of spectrality, of the amputated relations, the ones that have been superrepressed.

These commonalities, that can diverge, and co-exist in the Uncommons, become the sites to remediate the vectors that have been refraining our transitioning-away from the messianic, decaying march towards Global Warming. They are the situated spaces – supported by time-based props as social pedestals – that aid us in proportionately ‘looking’ to depose the sole privilege of human perspective, and its illusory and toxic phenomena. This is undoubtedly a most critical task, for it now seems utterly obvious that our own survival, as species, is entirely at stake.

With that, and before moving on, let’s review this crucial intersection where the ‘social’ of the social pedestal registers more decisively unto our passages. It is at this moment that I claim the ‘social’ – of Arendt’s ‘rise,’ of Baudrillard’s ‘end’, and of Tiqqun’s ‘transparency’, all bracketed by Latour’s ‘associations’ – to indeed negotiate all the aforementioned metrics, precisely to substantiate the ‘pedestal’ not as a heightening, but as a common mode and space for its own ‘demonstration.’ Here we go on to explore the scale and proportions of our ‘commons’, as the point where we turn to visit a possible transition for the art and science of perception: from ‘phenomenotechnology’ to a more productive space and process I will soon specify as epistemológica.
Turning Turtles to Tables

The methods I have been enacting – as indirect and intransitive ways to carefully put forth social pedestals [see c.(G)6] – are aimed at levelling individual and collective, visual and perceptual criticality, where I (as many other colleagues) push to rid the illusory binary of the concrete (exterior) or the abstract (interior) beyond their respective limits, indeed yearning for a flattened (but not flattening) plane of immanence. Wholly cautious of the un-diversified and hierarchical pitfalls such plane may bring upon our ongoing stroll, let us oscillate between and towards the qualities of environmental phenomena that I am trying to demonstrate by showing you some of the works I manifested with the Anxious Prop (AXP), particularly through our Y-Table series.

Let’s depart from a quote by Alain Badiou, who, in an interview published in the then most-recent reprint of The Concept of the Model, stated that

‘I remain convinced that every philosophy that eliminates the category of the subject becomes unable to serve a political process. That is not to say that a subject should be identified from the outset as the working class or the like. Certainly, there is subjectivity in politics and there is subjectivity in art and subjectivity in love and subjectivity in science itself. As such, I attempted to completely rethink the relation between formalization and subjectivity.’

This somewhat surprising statement by Badiou – which carries a tinge of that ironic distance, one that seems to reject any possible mathematical predication for fulfilling the so-called stabile of ‘objectivity’ – was central to the foundation of the collective (see www.theanxiousprop.org). It operated heavily on our background, particularly towards defining ‘demonstration’ as a hybrid that facilitated potentials, even as in the form of ‘love’ between the political and the scientific. But it was

only after Case 2, when we received an invitation from Ellen Blumenstein of the Berlin experimental art space Salon Populaire to produce our third intervention that the statement came onto the foreground. As we worked to propose Case 3: The Black Swan Issue, the core group came together as Elin Hansdóttir (artist), Mendel Heit (industrial designer), Fotini Lazaridou-Hatzigoga (curator), and The Product with Jens Wunderling (industrial designers and programmers), together with Leah Whitman-Salkin (writer, critic) as editor, and me as director. During the few months prior to the event, we conducted weekly breakfast meetings where our exchanges were done by loosely following Ryan’s Threeling practice [as yoga of relations, see Exegesis]. From those breakfasts, we produced a collective statement (that would later appear on the masthead of the Case 3 feuilleton) that reads

‘In an effort to review the dialectic of the natural and the political on the one hand, and of the esoteric and scientific on the other, we resort to an intuition about collectivity. We set forth with early Soviet theatre, more specifically revisiting Vsevolod Meyerhold’s biometrics and Lyubov Popova’s scenography for The Magnanimous Cuckold. In revisiting this political period and theatre work we remain steady in wanting to nurture our curiosity to work with local, collective practices. In considering the Black Swan we focus on its inverse: a low impact, high probability event. But in order to do so, we opted to engage a method to create an initial discourse within the collective, and later with the audience. Paul Ryan, a seminal video artist, developed a technique he termed “Threeling,” a model for resolving confrontations in human relationships based on the interaction between three elements, albeit participants. For the past month, the players of Case 3 have been in a continuous dialogue using this technique, a process we intend to project onto the space and audience.’

Thereon, in parallel to the collective statement and our gatherings, we each moved to make our respective contributions to accompany the feuilleton. Some produced related imagery, or researched related matters to the *black swan*, as model and as metaphor, with particular concern over Nicolas Taleb’s free-market speculative practices being professed by his followers and the then-bestselling book of the same title. My own reaction was to write an essay titled the *Parametrics of Walking at Supersonic Speeds*. It was not only a diatribe about the facile, general, and problematic over-use of metaphor and of parametrics, but also about the specific toxicity of the ‘black swan’ metaphor and it being associated to free-market speculation. My essay was an attempt to devise some of that ironic distance from the metaphorical set of values of the term, precisely to differentiate the scales and disproportions of its misuse. That spirit of differentiation was at the heart of our ‘inversion’… again, ‘to yield a low impact, high probability event’ that was markedly unpolarising, working with the audience in non-binary contrasts.

The question, then, was how to make that perceivable, but not prescriptive? Our search for an answer led us directly to the scenographic arts.
of the Soviet Theatre, which is the reason we ended up with Meyerhold and, more importantly, with the work of painter and scenographer Lyubov Popova.

Her set for Meyerhold’s rendition of the *Magnanimous Cuckold* was of great significance (no less so to Kiesler, who paid close attention to this particular stage-set, influencing his work with display, surely becoming a trace of the *Turtle*). So, while practising that ‘loose’ version of *Threeing*, we came to revise Popova’s kinetic installation for the theatre play, as well as infrastructure to the biometrics that Meyerhold would apply to the way the actors played and operated on that staging. We realised that we could reinterpret that type of ‘theatre’ by collapsing the stage and the spectator into a singular triadic form. And, that is how the *Y-Table* came to be.

The tripartite *Y-Table* emerged as prop for AXP to turn *Case 3: The Black Swan Issue* into a ‘social pedestal.’ As we continued working from the idea, and experimental practice, that the *Turtle* was an infrastructure and mobile scenography (which was the stage-set for what was *Case 1* of the Anxious Prop), we found ourselves configuring a ‘table’, in no small measure as deference to Marx’s *table-turning*, as well as a recognition of Derrida’s ‘table as archon’ [see c.(A)].

What emerged, beyond our individual intentions, was yet another small-scale, mobile infrastructure – in this case in the form of a discretely triadic plane set directly against the division and linearity of modern production. It partitioned the space onto a diversified triadic space that challenged the traditional binary of the theatre, of spectators and actors, if of author and audience. The Y-Table challenged the linearity and intentionality of perception predicated by assumed modes of division of labour as well. It did so by taking ‘order’, as prescription, away from the assembly-line process by opening multiple, non-sequential modes of production. In this instance, the production consisted of the gathering, editing, cutting, folding, marking, and binding the Case’s feuilleton, as a collective, diversified, and proportional system of interfaces and possibilities: each individually edited and bound publication becoming a small-scale ‘low impact, high probability event.’
The event at Salon Populaire did have ripple effects coinciding with an interest in alternative approaches to scenographic display, support structures, and other types of collective labour. And in the following two years, after several more commissions for, and iterations of the Y-Table, Matthias Böttger, the curator for the German exposition in the X São Paulo International Biennale of Architecture (2013), invited AXP to become the principal invited contributor. Given that the curatorial mission of Böttger was to facilitate a series of workshops about the future of Brazilian urbanity in several cities, culminating in a final workshop at São Paulo for the biennial, we thought a series of locally, collectively produced iterations of the Y-Table would serve appropriately as a worthy prop and pedestal [see LIST.. pp.68-73].

The Y-Table, that began as a ‘preparation’ for interface between AXP itself as a group, now became a full-on scenographic and collaborative infrastructure for a significant, international, multi-city exhibition. It not just became the object of collaboration itself, produced from scratch as a collaboration between a local group, at a local site, with AXP and a commissioning agency (in this case with Böttger, the Goethe Institute, and the German state), but it also was the interface between all those players to assemble, exchange, collaborate, and display the dynamics and outcomes that emerged between them for the Biennial.
That complex of physical, mental, technical, and collaborative figures is the active form of demonstration that entails the social pedestal. The role of AXP, which began as general proponent for the metrics of the ‘table’, and later as mediator for the realisation of the infrastructure, ultimately withers and releases its agency in order to facilitate the engagement and exchanges of the participants and of the objects on their own terms; neither being inside nor outside, but from within, as fluid, heterarchic, and proportional component to the broader effort. 229 In the case of the Y-Tables for Nós Brasil, what provided the strongest quality of proportion was the comparative nature of the project’s ambition. Proposed as a network of workshops that provided site-specific authorship and local experience to each of the specified, major cities of Brazil (Porto Alegre, Curitiba, Salvador, and São Paulo), the workshops would then be contrasted one to another in order to assemble a larger array of perspectives, yielding unforeseen ways of thinking about the future of urbanity in Brazil.

(Fig.104) Y-Table at Casa do Povo, by the Anxious Prop for the X Architecture Biennial, São Paulo Brazil 2014. Source photo: Berrios-Negrón.

The Y-Table, by definition, became the differential surface (as opposed to divisive partition) not only carrying the material economy and embedded memory of the collaboration, but also providing the possibility for ‘trans-scaling’ the complex differences cities embody, and need to arbitrate. The ‘tables’ gave proportionate sense, not as holistic or homogenised forms, but as a series of specific, small-scale case-studies about the respective hindering problems and prospective contributions to the greater phenomena that constitutes urban living in each of these regions. Those contrasts were ultimately made available in a series of published ‘newspapers’ [go to www.blog.goethe.de to download] produced at and by each location, portraying reflections primarily from local actors, with added reflections by exterior participants from other cities, by the curatorial teams, and by AXP.

Despite the significant and worthwhile feedback, the São Paulo Architecture Biennial became the ‘open-end’ to the Y-Table. There were several reasons for this; the main one being that the Y-Table seemed to have become too successful. This was made evident by an indirect invitation from the Goethe Institute (the state-sponsored and largest represen-
tative of the German language world-wide) for AXP to produce a ‘significant number’ of new Y-Tables to be distributed to a selection of Goethe Institutes around the world. After several, often very uncomfortable, conversations with founding members of AXP about the offer, we leaned on rejecting the generous offer. It was a very difficult decision (which actually led to the collective breaking up), as the offer was indeed made in good faith and was enthusiastic in principle. But when we thought through the ramifications, for the Y-Table to change from a site-specific infrastructure to a mass-produced furnishing – potentially even an iconic symbol of Germany – well, let’s just say we became weary of such potential effects.

We were transparent about this.

As stated on the final workshop ‘newspaper’ titled New Middle Class, as a self-critical assessment of the work, say as a decrying of our own failure, in the reflexive essay titled The São Paulo Barbecue: Bringing the Y-Table to an Open-End, we stated that

‘Undertones of critical energy from those working with the Y-Tables gave life to our own self-inquiry based on how the workshops and Y-Table could maintain their conceptual and formal integrity without collapsing into a formalised product as a formulaic approach to public discourse and participatory frameworks. […] Thus, simply ending the Y-Tables by ceasing to make more versions of it is not enough… instead, the table ought to be transformed into its own open-end… and this open-end, in short, transforms the table into a “churrasqueira” or barbecue. The barbecue is also an often-found, hand-crafted object used in daily life, and as such brought on to the recent and on-going demonstrations [against the World Cup and Olympics in Brazil, at the time of writing the text]. Not only did these barbecues form spaces to gather and eat, to talk during and about the demonstrations, they also moved along with the demonstrations themselves, at times even as mobile, disruptive elements creating smoke and smell that tend to bother the elite. Therefore, along with the final hybrid Y-Table donated to Casa do Povo, as well as the Churrasqueira da Bienal (Biennial Bar-
becue), both became props for community interfaces, and a singular means to an open-end... i.e. ending [by burning the wood of] the workshop Y-Table, while opening that which is integral to AXP, its material presence as conceptual, social pedestal for new forms of social interface and spatial exploration.’

In hindsight, as you and I walk along here, I am now feeling that this particular review of the Y-Table produces an elaborate instant of fetishization, only to lead in that very moment to the dissolution of the table’s ‘aura’. The dissolution (or even the threat of) is caused by the mere possibility of the table to be re-produced as a limited mass-production and commodified item — where its potential for paradigm is lost [see c. (G)6]. That potential loss of aura (‘potential’ because I would argue that our act did, eventually, allow the Y-Table to retain its embodied character) in turn triggers a critical query. The query could be minimised to the tired question of what is ‘authenticity’ in regards to origin or copy and the work of art. But if one extends the course of relations to that which blurs the boundaries of the art object in relation to the expanding performative field —

— i.e., the political valuations that activism and collectivity engender, the epistemological questions growing from ‘artistic research’, and the dissociative impacts the knowledge economies are loading upon the habitable environment —

then one is confronted with a far more prescient discussion about how aura operates at the level of display and of infrastructure, for art and cultural production. As core context, the social pedestal flows-through, and intersects such discourses about the object, performance, and their relations by being set-forth in indeterminate conditions, without a prescribed form or outcome, and always as an experimental act.

Processed through the *Turtles, Y-Tables*, and by AXP itself, I have drawn from my own participations and analyses by actively observing how such resulting affirmations, rejections, or failures manifest. Not unlike the reflexions I made about *Earthscore Specularium* (2015, see pp.96-129) presented in the attached excerpt of the publication *Spaces of Anticipation*, their adaptations, and their qualities, as infrastructures for socio-environmental object-relations enhance and project-forth the question of what is then desirable. Still to this day, what I generally tend to get from working with social pedestals is (1) how they demonstrate their ‘woody brains’ (and not their divisive membranes/ *men-brains*) as they facilitate interfaces and exchanges; (2) how they remain perceptible as interruptive forms of attraction; and (3) how they may simply ‘disappear’, as *preparations* or *naturalisations*.

*(Fig.106)* Churrasqueira (*BBQ* - for burning the *Y-Table*) at Casa do Povo for the X Architecture Biennial, São Paulo Brazil 2014. Source photo: Berríos-Negrón.

All three qualities offer relevant sculptural and epistemic potentials. Now, we have already visited when social pedestals facilitate ‘interfaces’ and ‘demonstrations’. What we have still to visit, then, is the quality and
magnitude of their ‘disappearing’ potential. That potential is always the beginning for me: not its study, which came later, but the deep curiosity a ‘disappearance’ engenders. That effect and affect become my obsession and modus operandi, driving me to study and collect things, concepts, and models that register to me as specific phenomenotechnologies. I have greatly benefited from the leisurely delight of holding them between my hands (physically and metaphorically), as the collection still grows:

subject/object, René Descartes;  
monad, Gottfried von Leibniz;  
spirit, GWF Hegel;  
transcendental object, Immanuel Kant;  
superstructure, Karl Marx;  
index, Charles Peirce;  
antropofagia, Tarsila do Amaral & Oswald de Andrade;  
transculturation, Fernando Ortíz;  
water mill, Marc Bloch;  
arcades, Walter Benjamin;  
Gestell, Martin Heidegger;  
engine, Gilbert Simondon;  
curtain, André Leroi-Gourhan;  
crisis of scale, György Kepes;  
social sculpture, Joseph Beuys;  
abstract machines, Deleuze & Guattari (and Gerald Raunig);  
Prometheus’ liver, Jean-Pierre Vernant;  
intramural, Hannah Arendt;  
relational circuit, Paul Ryan;  
cyborg, Donna Haraway;  
boundary object, Susan Star;  
intersectionality, Kimberlé Crenshaw;  
hypomnēmata, Michel Foucault (and Bernard Stiegler);  
anarchive, Jacques Derrida;  
preparation, H.J. Rheinberger;  
black box, Bruno Latour;  
trans-scaling, Boaventura de Sousa Santos;  
arche-fossil, Quentin Meillassoux;  
windkanal, Florian Dombois;  
hyperobject, Timothy Morton;
spectral metaphor, Esther Peeren (w/María del Pilar Blanco);
divergence, Marisol de la Cadena (via Isabelle Stengers);
infrastructure, Lauren Berlant (via Susan Star);
neganthropy, Bernard Stiegler.

Over time, of course, I have noticed that some of these sites and catalysts for display tend to spread and challenge Bachelard's own idea about what are phenomenotechnologies... particularly those making important differentiations by resisting a propensity to become instrumentalised, even commodified, for the purposes of ideological ‘techno-science’. Several of them I have already mentioned along our walk. Some others I have not. But I ask you to indulge me as I mention some of them once more, solely with the desire to encourage you to visit them yourself, hoping you find them as inspiring and as challenging as they have been to me... these are ‘anthropofagia’ (do Amaral and de Andrade, Brazil, 1928), ‘transculturation’ (Ortíz, Cuba, 1947), ‘relational circuit’ and ‘intransitivity’ (Ryan, USA, 1971), the ‘liver’ (Vernant/Stiegler, FR, 1979), ‘cyborg’ (Haraway, USA, 1988); ‘boundary object’ (Star, et al, USA, 1989), ‘intersectionality’ (Crenshaw, USA, 1989), ‘anarchive’ (Derrida, FR, 1996); ‘preparation’ (Rheinberger, DE, 2006), ‘art-as-research’ (Dombois, DE/CH, 2006), ‘hyperobject’ (Morton, UK/USA, 2013), ‘spectral metaphor’ (Peeren, NL, 2014), ‘infrastructure’ (Star/Berlant, USA, 1996/2015), ‘divergence’ (de la Cadena, PE, 2015), and ‘neganthropy’ (Stiegler, FR, 2018). I put these forth for you because I find that they hold a particularly nuanced capability to yield ‘observable’ phenomena while being effectively elusive objects (abstract, performative, or absolute) that tend to elude the reifying ideological pull of techno-science. What I find most potent is their propensity to ‘disappear’, even when they may be manifested in their physical and/or embodied states. That occurs in a manner that is superlative to those remaining on the longer list above, a manner that turns them retrospectively to the taxonomic convention of Epistemologica, as an abduction from Rheinberger’s ‘preparation’. 
(Fig. 107) Microscope glass slide (preparation). Source photo: Berrios-Negrón.
(Fig. 108) Polynesian navigational ‘stick chart’, XIX century. Source photo: British Museum.
The misplaced concretism of things and the careful supplementing of Epistemologica

Rheinberger reminds us that there is no ‘exhaustive typology’ or comprehensive account of support structures for scientific observation. He reminds us that, although that account was started, it was seemingly abandoned and relegated to the annals of the history of science. He refers to that not-yet-constituted typology Epistemologica. And, he places significant emphases on its importance because it ‘communicates to the public that science is research — a comprehensive, far-reaching, manifold cultural process.’

As he, I also find that possible listing relevant, not just because of its meaning and value, but also because of its unfinished quality. Epistemologica seems to call for us to supplement and contribute to its potential expansion. And that call provides a chance for it not just to solely remain in the purview of Western technoscience, but that it can be diversified to encompass many more use-perspectives, across research disciplines, say, as a world with many other worlds to be perceived.

Departing from the reflections I have accrued through the work with the Turtles, with AXP and with the Y-Tables (not to mention with the Nonspheres, and Immediate Archeologies series), I would argue that we can now take Rheinberger’s cue to foster a broader classification stemming from Epistemologica. Let’s answer the call — albeit with a more rigorous purview against ethnocentric objectivity and for perspectival diversity — by first drawing attention to Rheinberger’s description of Epistemologica and of ‘preparation’ as —

‘[t]he things around which the knowledge process unfolds, and that have been relegated to the margins of the history of science. Yet they play a decisive role in the development of scientific knowledge. . . . Epis-

temologica should be understood as all those material things rendered permanent in various ways that play a part in knowledge production by enabling facts to be exposed and elucidated. "Preparations” [as translated from the German Präparat] represent a special class of Epistemologica. They play a particular role in the biological sciences, the sciences that study living things. In these sciences, diverse preparations and techniques for producing them have been developed, because special arrangements are required to fix and stabilise living things for gaining knowledge about them.”

Rheinberger is here about to encapsulate not just the definition of ‘preparation’, but the definition itself of ‘modern research’ in experimental science – his core concern. That capsule is ostensibly enveloped by his reading of Heidegger’s Darstellung, one he described as the fundament to modernity and its conquest of the ‘world as picture’. It is a ‘planetary’ view of the world as a configuration and reconfiguration of things that are, as Rheinberger puts it, in a constant material and technical ‘representing production of productive representation.’ And it is in that binary, dialectical loop that the preparation holds a special place in its own non-metaphorical embodiment for the paradoxical phenomenon that is the ‘world picture.’ What I interpret this to me mean to Rheinberger is that in that feedback loop – of representing production of productive representation, in regards to science and knowledge production – things are not supposed to become ‘distorted and artificial, but rather come to themselves’. Attaining that self-realisation, that self-arrival, is thus the core concern of research in experimental science: to organise and foster processes, without intention (as objectivity), to ‘bring out the properties in them’ so to make-visible their properties to construct their definition, and to facilitate their re-definition thereafter.

The paradox of course lies in the conflict between whether the inherent qualities that define the specimen that is under analysis are not compromised or destroyed by the very process of their analysis. And then, even if one is still able to present the specimen ‘as is’, there is the problem of its coherent stabilisation for further redefinition. That is, precisely, the virtue and capacity of the preparation: to seemingly defy-by-embod-
ing that conflict, not as contradiction, but as paradox. As Rheinberger states:

‘The paradox of science becomes particularly clear in the case of scientific preparations: all the work that goes into manipulating them is deemed to have succeeded precisely when it [the support structure] has been made to disappear in its object. Only then is a preparation considered authentic. Whence the fundamental distinction between preparations and another class of Epistemologica that can only be mentioned here are: models. A model is defined as a limit object or rather as the transposition of the model’s object into another medium. Thus whereas the model can at best claim to “look deceptively like” the modelled, a preparation participates in the very materiality of the thing under investigation. It is made of the same stuff. It is a figuration that this stuff has been made to yield’ (my emphases). 233

From the glass slide of a microscope to the dry and wet ‘transparent’ methods of preservation and conservation of specimens; and from the radioactive substances that make visible and conserve internal contrasts, to the more recent types of chromatographic Epistemologica that allow for the analysis of molecular specimens, the act of ‘disappearance’ of the preparation is, to me, fascinating. I find it so, not necessarily for the physical trick that it involves, but more for the political and epistemic affect that it projects and that is so difficult to attain – the transformation of a specimen (of an object-relation in our case) to stand for itself, turned into the ‘stuff of its own stuff’.

But I am not here with you attempting to hold myself or my work to that standard of scientific enterprise, or even wanting to portray ‘authenticity’ as necessary for ‘reality’ to occur. Likewise, I am not extending our stroll to cross over onto the beleaguered discourse of the ‘autonomy’ of art, where the surrounding suppression of context as ‘disappearance’ is considered of high value, even when it manifests as the heightening of the artwork’s so-called ‘anxious objectivity’. 234 What

I mean is that I am not attempting to attain either the scientific or the artistic effect – i.e. of actively looking to disappear a support structure or infrastructure of display – because both are, in the end, part of the same modern illusion: to disconnect, to sever, to master, to dominate. By attempting to replicate or attain that ‘manipulated’ act of disappearance, one already predisposes an intentionality that, to me, is either insincere or deterministic. Furthermore, it is questionable and even ‘unrealistic’ to sever a specimen from the sets of relations that allow it to ‘exist’ in the first place, precisely, away from its own perceptibility of life. Think of most animals in zoos, especially flying birds and large mammals: is that the kind of ‘display’ we are looking to foster? Especially now, when we sense the cataclysmic consequences of the severance of material and labour, say social relations that occur when the subject is (re)presented (as the quintessential act of consumption)?

To attain epistemological traction, for fostering relations – which is what I am, for the moment, attempting to depose here for you, before or beyond either knowledge or reality – one need not to play magic tricks with what one looks to contemplate, learn from, or appreciate. We need not to depersonalise ourselves, to be severed from ‘their’ reality. Of course, there is reason for scientific exploration to have the capacity to isolate specimens. But that has become an all too facile reflex. It is even the standardised ‘state of the art’ of mind, of the externalised, objectified technicity of techno-science, of the violent act of severance and of ordering that is itself the standard of colonisation, one that we have become so automatized to enforce and reenact.

What I therefore look to learn from ‘preparations’ is that the ‘disappearance’ ought not be an objective or intention. It is, for me, a far more critical directive to define, sculpt, programme, and install preparations as differential support structures. Upon their encounter, what may be discernible, even abrupt, is their material, labour, and mnemonic economies, always prescient to the meaning of the work. After the initial encounter occurs, for the infrastructure to disappear, it must offer careful ways to facilitate, not desirable nor illusory effects, but the perceptual and epistemic potentials themselves. Such potentials are admittedly germane to the preparation. But the preparation does not quite fulfil the qualities as differential infrastructure that define social
pedestals. To further build that definition, we ought revise Susan Star’s ‘boundary object’.

Susan Leigh Star has, before, and will continue to accompany us forth throughout the entirety of our walk. Her section titled ‘Requirements for Feminist Method’ in her working paper *Misplaced concretism…* (prepared for the Gender Nature Culture Conference in Aarhus, DK 1994) she prepares to define the term ‘boundary object’. Before doing so, Star states why it is problematic to engender and automatize the disappearance of objects:

> ‘I mean “object” to include all of these things: stuff and things, tools and techniques, and ideas, stories, and memories – those objects which are treated as things by community members… A community of practice is defined in large part according to the co-use of such objects, since all practice is so mediated. The relationship of the newcomer to the community largely revolves around the nature of the relationship with the objects – and not counterintuitively, directly with people. Acceptance or legitimacy derives from the familiarity of action mediated by “member” objects…. A better way to describe the trajectory of an object in a community is as one of naturalisation. By naturalisation I mean stripping away the contingencies of an object’s creation and its situated nature. A naturalised object has lost its aura of anthropological strangeness, and is in a sense de-situated in that members have forgotten the local nature of the object’s meaning.’ 235

While preparation and naturalisation meet at their respective ‘disappearances’ in the spectrum of scientific objectivity, it is worthwhile to differentiate, and to associate, what Rheinberger and Star mean. Again, from Rheinberger we get not the instruments and equipment that facilitate the visualisation and analysis of specimens, but the technics that are more than just support structures, as the Epistemologica that allow for the things to ‘come to themselves’, and for the scientist to perform their analysis — either at 1:1 scale (if the specimen is perceivable as

such), or by adapting the specimen to the instruments that facilitate their scaled visualisation. Of course, in many ways, the preparation may be a subset of the instrument, as in the aforementioned case of the microscope slide. But what makes the ‘disappearance’ of the preparation specific – just as the glass slide immediately disappears – is its independence as an object unto itself (quite literally), and its adaptability to be-come the support structure… both simultaneously. What makes the preparation even more so ‘particular’, in range with the broader attempt to establish a typology of Epistemologica is its potential to disappear, only, by the way in which it is ‘reverted’, as it ‘comes to itself’. It plays a strange triadic role as unique object, as standardised object, and as standardisable system-material.

To add, in Star’s referring to Latour’s *Science in Action*, we get a broad description of things that can be circumscribed to Epistemologica as well. She extends the framing of the arguments onto all the instruments and equipment that serve and even define ‘membership’ in a (scientific, or technical) community. It seems to me that Star argues that the disappearing act of those ‘things’, as a technic, is not one side of the binary of interiorization (as opposed to exteriorisation, as technē), but as a tertiary ‘forgetting’ of the already ‘exteriorised’ objects of knowledge, which include props and/or infrastructures (as structures for support and analysis), becoming, for a community, the stuff of their own stuff as well.

What Star’s ‘naturalisation’ seems to further extend is that the ‘stuff’ of the support structure also becomes of the stuff of the community itself, by which its entire materiality – of what it practices, and of what it supports, epistemologically – is constituted. Naturalisation is what she calls the broader phenomenon and ‘organisational scale of the ecologies of knowledge.’ For Star, that blurring disappearance – albeit one that is actually not invisible, or say, invisible – does not imply immediacy, but rather requires longer periods of time. That is, the disappearance is neither deliberate nor immediate, contrary to how it occurs in the preparation. Instead, it occurs slowly. It happens when, at the moment that the naturalisation occurs, by way of the incessant use and resulting

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comfort level – when the thing reaches such a climax of banality – that it simply ‘disappears’. It does not occur to become physically (like the preparation), it is rather layered-beyond the community’s percept, memory, and re-cognition, by way of their assumption.

For Star, the arrival of that moment becomes a problematic act of representation, particularly in the social framework of constructing reality by way of the modern process of reiteration and representation that clearly is techno-scientific phenomenotechnology. If it is, as Rheinberger describes, a constant material and technical ‘representing production of productive representation’, then the potential for ‘embedding political decisions’\(^\text{237}\) in the disappearance of technical artefacts is all the more likely to reify. As Star describes, ‘(s)tripping away the contingencies of an object’s creation and its situated nature’ allows (1) for technical things to become severed from what they represent, (2) dissociated from being questioned as to how they are themselves displayed and represented, and (3) thus much more opaque as to understand what they are displaying and representing. Indeed, to me, it is the most political of propositions: the appearance of disappearance – whether intentional or not – to result as a form of concealment and suppression.

Of course, that condition goes beyond technical and design instruments, and extends neatly and deeply onto artworks as well, as they are ultimately and constantly challenged by this conflict, both in how they serve, and how they are valuated, by their communities of practice and their markets. Their presence and meaning, particularly in socio-technical terms, hinge on that most important potential for political decision and valuation – precisely on the potential that generates the aura and semiosis of ‘strangeness.’ The conditions of community (which I will continue to extend as a social beyond the human), defined by labour economies, material localities, and a lack of familiarity, constitute that ‘strangeness’, and are indeed what fades through – not representation, or even reproducibility – but through commodification.

For us Spanish speakers, drawing a line between the comfort level of banality and of the disappearance-by-assumption, is very easy…

simply because ‘commodity’ to us connects directly to ‘comodidad’, which translates symmetrically to comfort, and to the mediocre. That does not signify that the fading-away of the boundary that defines the disappearance is either smooth or universal, as it is neither strictly functional nor practical. Nor am I implying that the loss, the unvisibility, is squarely relying on memory or perspective. For the preparation, this is not because the scientist or laboratory clinician is looking to actively make the support structures ‘forgettable’ in order for them to disappear liminally, turning the display into a ‘limit-object’. It is rather the specific object and conditions that lure a specific community to get used to ‘not seeing’, that ultimately make the disappearance take place, over time. Again, unlike the case of a preparation, a naturalisation occurs, often, unwittingly, as an act of what Star herself identifies as ‘collective forgetting’.238

The act of disappearance tends to be considered a master stroke of persuasion in both the technical act of direct manipulation and the social process of indirectly induced forgetfulness. That is because it presents a contradiction over the confronting-yet-negotiable principles that are managed by Rheinberger’s own paradox (as the overlaying of the ‘paradox of science’ that Rheinberger brought to us earlier, where ‘all the work that goes into manipulating them is deemed to have succeeded precisely when it [the support structure] has been made to disappear in its object’ onto the thing being manipulated to come to itself… suggesting, not a paradox, but a contradiction as the core effect that socially ‘constructs’ the modern world picture of science).

What I mean is that the contradiction lies in that the technological disappearance is (for a lack of a better phrase) ‘the state of the art’ of formalisation. That is because the disappearance, especially of support structures for analysis and observation, is both an effect and an affect. Their correlation is the construct of highest impact for science, one that only then underscores its greatest (discursive) weakness, unleashing the conflict between empiricist and formalist purviews.

In short, formalism’s service of correcting idiosyncrasies and biases in
an individual work-site or implementation will tend to conflict with the empiricist argument that formalisms prohibit access to the work-practice itself. According to Star, that conflict is the greatest challenge for representing complexity. Formalism’s challenge, on one hand, is not limited to the strict sociological study of division of labour, but (of course) it is prescient to art as well, as the act of formalising tends to conceal (either by internally hiding, or externally shedding off) the political choices (of the practice in question) that lead to the composition and constitution of the form, as a reductive act. On the other hand, for empiricists, the focus on a specific work-site delimits the ability to perceive, quite literally, the broader picture.

The formal-empirical tension tends to lead to a weariness over the mess that the social may provoke, often ‘denigrating the social as impure’.\footnote{ibid. Star 1995, 110.} And it is not only limited to techno-scientific communities, as surely it can be experienced in artistic communities as well (no less among those who control the so-called ‘art market’). That tendency to denigrate the social – away from the diverse, heterarchic complex that comprises all of life, human and non-human – is the prescient challenge that I want to work towards re-mediating. I am aware that this is, obviously, by definition, an enormous claim, and not a task for one person. But it is nonetheless the breadth of the scale of the task at hand. How to facilitate sites and spaces to make-visible the rampant ways power-structures look to control, disrupt, or exacerbate any potential for ‘seeing’ past beyond that hegemonic world picture, the one that is now the messianic hegemony of Global Warming? Is the technologist the actor-figure we ought aspire to become, to look past-beyond to the manifold perspectives of living for what they are?

‘The technologist is the human being who makes it possible to “give back to culture the truly general character that it has lost”; it is through the technologist rather than through the psychologist or the sociologist that one can “reintroduce into [culture] a consciousness of the nature of machines, of their mutual relations and their relations with the human being, and of
values implied in these relations”. 240

Perhaps, if by ‘nature of machines’ we mean to include the natural environment. But to challenge that splintering power, that amputating force against the social and its potential for diversity, I beg the obvious, and more important, hypothetical question:

· if the modern ‘construction’ of reality has yielded the ultimate toxicity of ‘disappearance’, in phenomenotechnical terms, and no recent re-evaluations of scientific, cultural, economic, or technological approaches – speculative, immanent or otherwise – seem to be having significant impact on perceiving the disproportionate decay being caused by the ethno- and anthropogenic project, then what kinds of technics, as precedence to technology, may aid us in reconfiguring the formal, political, naturalised, albeit phenomenotechnological act of ‘disappearance’ in order to survive?

· Are there other manners for ‘preparation’ or ‘naturalisation’ that could be added to Epistemologica, not as typology, but as revised and growing genealogy for a practice, one we shall now call epistemológica?

Infrastructures from Boundary Objects

Star gives us more clues. Amongst them are her infrastructures. They seem to arise by way of her own partial programmatic list of ‘positive steps’ we can take to ‘form the tension and debate between formal and empirical methods into objects for analysis amongst social sciences and other sciences.’ 241 And I argue that such steps are applicable to how we may transform support structures, from a mere typology of phenomenotechnologies,

to a practice of *epistemológica* that could aid in cultural production’s general engagement away from our techno-scientific march towards Global Warming.

The first step (as a different chronology to the one that Star presents) is constituted by ‘boundary objects’, published in her now-landmark paper titled ‘Institutional Ecology, Translations, and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907-39’ (1989). They emerge as a category that Star senses is necessary to aid in understanding the relevance certain *things* (as she defines above) have in allowing for intersecting and ‘seeing’ across margins.

Let’s review her definition once more… first, one cannot quite invent a boundary object from the outset. What constitutes boundary objects is their emergence and relevance across communities, holding deliberate flexibility to be abstract, concrete, conceptual, or physical. Second, that flexibility must then also allow the given ‘object’ to have different meanings to different communities while simultaneously holding a structure that is common enough to more than one world. That is their critical character: their recognisability across disciplinary, technical or cultural boundaries – as de facto ‘means’ of translation. Because they are not merely created, as they arise over time from durable cooperation between communities of practice, they ‘come to themselves’ as ‘working arrangements that resolve anomalies of naturalisation without imposing naturalisation from one community.’

That criticality is resourced from a combined willingness of the said communities of practice to accommodate ‘marginality’ productively. *Marginality* is a technical term from sociology that is defined by a person’s ability to have membership in more than one community of practice. It is not referred to by Star as an opposition to a ‘centre’ (or a periphery); it rather pertains to someone who has the capacity to ‘see’ multiple margins by virtue of having more than one identity to negotiate. But for Star, what is critical in the exploration and fostering of such marginality is the assurance – by way of a core feminist concern over imperialising and colonising narratives – that the development of marginal or alternate visions of coherence

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wholly acknowledges the unconscious problem of privilege. Boundary objects emerge from Star precisely as an abstract thing, and as a type or classification that is not quite square-to, but instead, departing-from the social-constructivist spirit of phenomenotechnologies. They are to be identified within and between communities of practice to make-visible and question the object-relations that otherwise may have disappeared by way of naturalisation.

We could extend that concern over disappearance from the ‘preparation’ as a potential shortcoming for the ‘boundary object’ as well. But in reality, the concerns over naturalisation are fundamentally disparate from the preparation. The latter is deeply nestled in the Western tradition of striving for perspectival standardisation (and its ancillary, affective hegemonization); whereas the boundary object is wholly conscious of the problems that standardisation may entail. There it lies, potently, in the battleground against establishing ‘universal niches’ and the dangers of creating ‘master metanarratives’, especially in the context of climate injustice… whereas Star would claim, more than ever, and I paraphrase, one person’s (or species’) standard is another’s chaos. In that sense, unlike the preparation, which is merely a scientific technique, the boundary object is an operative figure of itself, an abstract that does become productively, socially adaptable. That is the kind of enrichment to Rheinberger’s worthy aspiration for expanding the typology of Epistemologica: to defy not only functional ways, where the naturalisation of objects and their multiple legitimate memberships tend to be neglected, but also for the aesthetic manners, where judgment across the borders of communities is so direly desired and so rarely effectuated.

Interestingly, in terms of what then could be invisible substrates, Star deploys a most productive set of elucidations to contrast to her own work with techno-scientific communities — those designing, and contending with, the perceptual and infrastructural polemics that digitalisation presents in defining traditional forms of community and their boundaries (already in the early 1990’s!). Her accumulation of data and analyses give Star the momentum to take a leap. She starts to work to indirectly associate boundary objects to the ‘large information spaces’ of those infrastructures. I have not found a direct link in her writings, but clearly, as editorial configurations, you see in her essays a clear vector
of evolution from one to the next, where I find that she is guided by the following principle:

‘Where we hold firmly to a relational vision of people-things-technologies, in an ethical political framework (which I name here as feminist), we have a chance to step off the infinite regress of measuring the consumption of an object naturalised in one, centred world, such as objects in Western science, against an infinitely expanded set of essentially defined members as consumers. By relational here I mean to argue against the misplaced concretism (of techno-science), and to affirm the importance of feminism as method. I also mean to take seriously the power of membership, its continual nature, and the inherent ambiguity of things. Boundary objects, however, are not about this perpetual ambiguity, not just temporary solutions to disagreements about anomalies, but rather durable arrangements between communities of practice. Forgetting this, as we routinely do, we empower the objective voice that creates the suffering of “monsters” in “borderlands.”’

The ‘method’ Star implies becomes the core ‘challenge’ to fostering cooperation between heterogeneous worlds. And, it is the ever-more pertinent challenge to our daily lives today, given the highly deterritorialised configurations of today’s social media geographies. The need to (impossibly) mediate between the simultaneous demands for customisation and standardisation no longer applies to the parameters required by marginal group memberships due to the vast disproportions of these demands. It is then that the articulation of method-work, and of multiplicity, that feminism offers that may become for us a valuable practice of reflexive denaturalisation.

By contrasting the reliefs that such possible methodology reflects – ‘to step off the infinite regress of measuring the consumption of an object naturalised in one, centred world, such as objects in Western science,’ as that which has been systematically ‘disappeared’ – requires not yet another instrument of observation prone to naturalisation, but a series of marginal and proportionate practices for differentiating objects-relations.

ibid. Star 1994/2015, making reference to the terms ‘monsters’ and ‘borderlands’ stated by Donna Haraway, and by Gloria Anzaldúa, respectively (163).
I’d say Star also refers to this as ‘infrastructure’ [see Lauren Berlant at c.(B)]. It is no coincidence that Star leans largely on Bateson to expand her idea of infrastructure in a world growing between the physical and the digital. She actually begins her section on defining infrastructures by citing Bateson’s statement, ‘What can be studied is always a relationship or an infinite regress of relationships. Never a thing.’\(^{244}\) Clearly, infrastructure to her does not play to the assumed definition of being, say, railroad tracks, highways, or plumbing – i.e., she does not conceive of it as a ‘thing-substrate’, as something upon which something else runs or operates. It is instead a non-technoscientific, and ‘fundamentally relational concept’ to serve as a cybernetic for organising, and for already-organised, practices. Therefore, for Star, one does not ask ‘what’ is an infrastructure, but ‘when’ is infrastructure.

Berlant – in her simultaneous reference to, and contrast with, Star – does also ask ‘when’. But in Berlant’s effort to advocate for differential infrastructures, in contrast to Star, she does incorporate the concrete substrates, as the ‘lifeworld of structure: roads, bridges, schools, food chains, finance systems, prisons, families, districts, norms all the systems that link ongoing proximity to being in a world-sustaining relation.’\(^{245}\) In Berlant’s worthy and complementary deposition of infrastructure we find her addressing questions that are particularly central to contemporary counternormative political struggles. Her method towards building from (if re-mediating the work of) Star takes place by processing such counternormative struggles as spatio-temporals, where ‘commons’, say, as evolutionary specimens of the same epistemic family of ‘boundary objects’, are what encourages and energises infrastructural differentials. That said, Berlant’s commons are not tied to a traditional ‘agreement’ that is mutual, or that could be considered necessary to Star’s boundary objects, but, to a ‘nonsovereignty’ and a heterarchy that does not bind relationality to any specific shape.


Berlant does articulate that the ‘nonsovereignty’ is a ‘positive’ version of ‘dispossession’ (in contrast to ‘possession’ and ‘property’ as previously discussed with Latour), in that it makes the world bearable by way of the making of imminent spaces for a social (that is not merely replaced by association but by demonstration). But they are not a mutual movement in practice. The movement, which Berlant defines as one of the qualities separating institutions from infrastructures, albeit depending on a given perspective, is also what defines the infrastructure in the form of ‘glitches’ and ‘failures’. Star particularly refers to such ‘failures’ as having their own kind of high value, precisely because they become the ‘contrast’ (like the ‘radiotracer’, or radioactive fluid injected into you for an X-Ray or CT-Scan). They may very well be what makes palpable and ‘visible’ the relational and ecological process of sustaining our myriad of living worlds. But as Berlant builds upon Star’s admittedly formalist preferences, she argues that it is not enough to depend solely on the resultant of ‘failure’, i.e., when systems of reproduction stop working. That is precisely because you do not want to limit what can be ‘seen’ through the machinery of the separation that has in turn induced the relations among things in the first place. It is those dynamics that keep Berlant’s commons ‘definable’, rather than just a problematic of failures, and thus deliberately generating affirmative energy for social world-making. As Berlant critically cites from Star’s own binary – ‘when infrastructural things stop converging, they become a topic and a problem rather than automata of procedure.’

Ultimately, Berlant’s important contribution, as she stands on Star’s shoulders, is to precisely complement-to-transform that capacity of infrastructure beyond the outdated digital/physical binary: to give ‘life’ to the ‘failures’ in manners that exceed the commodification of social values. This is not to say that boundary objects are no longer of relevance in contrast to the commons; on the contrary. To me, understanding boundary objects is necessary to fully enact the divergence that are required for the commons to be a contributing factor to the differential and associative qualities of the social. And their interdependent technical histories – of boundary objects and of the commons, as affirmative components – further affirm the broadening dimensions of phenomena.

that under-stand and sustain these new forms of ‘infrastructure’.

This is directly underscored by Frederik Tygstrup’s analysis of Berlant, in which he sees her updated notion of infrastructures as providing us with alternative ways to converge signs and things. He sees these kinds of infrastructures as much needed differential spaces for our exchanges, either in failure and/or by automation, to be procedural moments that allow for object-relations, as well as the infrastructures themselves, to come alive. That flow, albeit imperfect and impure, gives such conceptions of infrastructure the capacity to make a transition, from a ‘topographical’ attitude to landscape, to a play of ‘topological’ differentials. This means that we can leave behind the traditions of mapping grids that passively contemplate the elements gathered by the mapping from singular perspectives, and be ‘thrown’ onto alternative planes of relations ‘where and when’ we may actively demonstrate, not just relations or objects, but the primacy of the cosmos of object-relations that allow for their coexistence, and ours, to take position and place.

Tygstrup states that such approach to infrastructure is a different kind of gaze, where we must unlearn our tendency to focus just on the concrete things, and expand our objectives onto relations that are not firm, but distributed – carrying what to me is a differential aura that we can perceive from object-potentials as ‘evanescent events and passing encounters.’

247 And, at that now-seemingly imperative call, to become versed in the perception of such evanescent cosmos of infrastructures is where Berlant is most strident in her simultaneous caution and call to arms:

‘The political and epistemic problem for the politically autopoietic – which is what all world-creating subjects in common struggle are – is that the placeholders for our desire become factishes, fetishized figural calcifications that we can cling onto and start drawing lines in the sand with. What remains for our pedagogy of unlearning is to build affective infrastructures that admit the work of desire as the work of an aspirational ambivalence. What remains is the potential we have to common infrastructures that absorb

the blows of our aggressive need for the world to accommodate us and our resistance to adaptation and that, at the same time, hold out the prospect of a world worth attaching to that’s something other than an old hope’s bitter echo’ (my emphases). 

(Fig.109) Threeing Rugs and Pavilion for Documenta13, Kassel, 2012. Source photo: Berrios-Negrón.

The Intransitive Form and Spirit of the Relational Circuit

Prompted by Berlant’s caution and call, and by Star’s reference to Bateson just before… we arrive at the following passage, bringing us once more around the ‘metalogue’ between Paul Ryan and Gregory Bateson [1977, see c.(C)]. Now, this particular Metalogue has been foundational to my work since 2002, when I met and started to work with Ryan and his partner, Jean Gardner. I’ve turned to it incessantly, because, to me, it cuts to the core of what I deem was of greatest concern to Paul and Bateson: not just their preoccupation with the environmental, political, and geopolitical crises of the 1970’s, but their general concerns about object-relations, in terms to human-environmental mediation and cybernetics. Now, as part of the reflexive process for producing the PhD, I have resorted to making ‘adaptations’ to the metalogue as process-work.

One key instance of this process-work was to review metalogue, as an extensive exploration into its references (bibliographic, artistic, etc.), taking place in 2018-19. That review, and ‘reading’ demanded some form of reflexive processing of its core materials. Instead of writing an essay, or paper, etc., I proposed an action that would let me both share and further test the outcomes and the investigation itself, as iterative research process. The process-action became a performance titled Metalogue: A Crème de Menthe, a Rusty Nail. Why Intransitive? which was produced as a ancillary iteration to the re-enactment of the Spectre and the Metaphor symposia [2016 & 2018, see c.(A)].

Realised in collaboration with Australian, non-binary performance artist Callum Harper, curators Lorenzo Sandoval, Sandra Nielsen, and Benjamin Busch, the re-enactment of Metalogue took place at The Institute of Endotic Research (T.I.E.R.) in Berlin for the 2019 edition of Transmediale (27 September 2018). In order to realise the performance, I asked that we collectively build a prop/infrastructure called the Wardian Table. As a play off from the colonial, transportable,
mini-greenhouse-superstructures called Wardian Cases (see INDEXICAL PROTOTYPE... pp.424-7), the Table incorporated a mobile greenhouse, a table, and trestle, all to not only play as prop for elements of the performance (as display for the readings, space for collective planting, and surface for serving of drinks), but to remain at T.I.E.R. indefinitely, to serve as collaborative and display infrastructure for their future exhibitions, events, and daily activities thereafter (for more details, visit the Intransitive Journal’s pages Anarchive: Memory #02 and its sub-handle for the Wardian Table).

For more information on Memory #02 see the Intransitive Journal [https://www.intransitivejournal.org]

(Fig.110) Sketch of Klein bottle. Source: Paul Ryan.
(Fig. 111) Process drawing of a Klein bottle section, for developing concept of the Relational Circuit, pencil on paper. Source: Paul Ryan.
(Fig. 112) Diagram of the Relational Circuit with Threeing positions, produced in an early Macintosh Apple computer. Source: Paul Ryan.
(Fig. 113) Drawing of the Relational Circuit with Threeing positions. Source: Paul Ryan.
(Fig. 114) Drawing of the Relational Circuit by Gary Allen for Paul Ryan, ink on paper. Source: Paul Ryan.
With that in mind, let’s revisit a short section of the Metalogue:

P: In your language, I don’t see the admission of the possibility that something might explain itself… where explanation would become **intransitive**.

G: The relation between the phenomena and the explanation is now intransitive so that this relation is the same as that relation.

P: Not the same. But intelligible in terms of.

G: If A explains B, then B explains A. Intransitive in that sense.

P: All right, but you need a minimum of three to understand something positionally.

G: Yes, I agree. To give it a direction, a twist.

P: **It’s directionless, really.** Non-orientable. It does not require assigning direction.

G: I want to know what language you use to talk about these positions. It seems to me that language is going to be bloody important…

P: The best avenue to that language I can find is in Peirce’s categories [of Firstness, Secondness, and Thirdness]…

The Metalogue ends with the following conclusion by Ryan:

‘In some way that I cannot quite put my finger on, this is linked-up [Bateson’s] preoccupation with an Euclidean mapping of perception. In Gregory’s mind there is a strong necessity for orientation. Peirce’s categories of firstness, secondness, and thirdness preclude orientation
and cannot be mapped onto Euclidean space. The Kleinform [as topology] works completely without orientation. It embodies a positional intelligence. Left and right, up and down, front and back make no difference. Once the mind is freed to think positionally without orientation, a logic of relationships naturally ensues. While Gregory is well aware of the ambiguity of left and right, he seeks to resolve that sort of ambiguity through a zigzag of logical typing in which one cannot tell a zig from a zag without labels. I do not think it works. Moreover, to my mind, he has never successfully come to grips with intransitive relationships as articulated by McCulloch in his 1943 paper on heterarchic values.

Intransitivity remains an anomaly in Bateson’s thinking. Nor has he fully reckoned with the tradition of Charles Saunders Peirce, a tradition more suited to making sense out of the rough and tumble of American experience [not just North American]. However intelligent and magnificent this man’s discourse is, it remains the discourse of an honoured guest and not an appropriate architecture for our experience and future.

Of course, Bateson lives. The final chapter of his Mind and Nature is a metalogue with his daughter in which he talks about writing another book, this one about the region where angels fear to tread. That book would deal with consciousness, aesthetics, the sacred, and the relationships between them.

In speaking of it, Gregory says the question is… “Onto what surface should a theory of aesthetics be mapped?”

When I visited Gregory in the Spring of ‘79 I asked how the book was coming…

Gregory said - “Oh, I’ve got about a hundred pages done.”

I asked - “Did you start with a surface onto which to map aesthetics?”

And, he responded —
“No. The book is a living thing.
I water it every morning,
and every evening,
with my tears.”

The intransitive qualities of the metalogue that I associate to *Memory #02* at T.I.E.R., and to my *props* in general – prior to, and thereon throughout the PhD – are enacted so to explore spatial and sculptural dematerialisation. This occurs, not with an intent of shaping specific outcomes for a public to perceive, but to *potentialize* infrastructures that may facilitate object-relational encounters and transpose the boundaries of author, thing, and audience so to conjure common, ‘intransitive’ experiences.

As formatted in the scaffold of *Terms* . . . , ‘intransitive’ is most commonly known as the grammatic use of a verb that does not take to a direct object or sense in a sentence. In mathematics, it is a property of binary relations that are not of transitive relations. This may include any specific relation that is not transitive, or refer to the broader property of anti-transitivity, which describes a larger set of relations that are never transitive. In philosophy of science, broadly speaking, ‘transitivity’ refers to our relationship to the world as *necessary* socially mediated (whether through concepts, history, language, or the social). Whereas ‘intransitivity’ refers to the potential of how science, in its non-technoscientific form, can discover mechanisms that are as they are regardless of whether humans exist or not (for a more extensive understanding of this reading, often relegated to *critical realism*, see the work of Roy Bhaskar).

Now, the definition of ‘intransitivity’ I would like to underscore

250  “Objections may be made to my proposed reconstitution of an ontological realm, which question in turn the intransitivity and the structured character of the postulated objects of scientific inquiry; i.e., the ideas of their categorical independence from men and events, respectively. […] Thus, it might be objected that the very idea of a world without men is unintelligible because the conditions under which it is true would make its being conceived impossible. But I can think of a world without men; and I can think of a world without myself. No-one can truly say ‘I do not exist’ but that does not mean that ‘I do not exist’ is unintelligible; or that it cannot be meaningful, just because it cannot be truly said.” - Bhaskar, Roy. *A Realist Theory of Science* (Verso, 1975/2008) 47.
here (with a degree of the humility implied by Bhaskar’s critical realism, i.e., of the world existing without men), is the one Paul alludes to in the ‘metalogue’ above. ‘Intransitivity’ is here presented as a quality that is key to his relational circuit [see EXEGESIS & c.(C)]. The relational circuit that Paul invented, and that René Thom identified as a new, unique topological form, would become the key semiotic claim for Paul to answer Peirce’s ultimate question, of how do we arrive at a logic of relations that may yield a ‘sign of itself’.

That logic of relations is, according to Paul, the relational circuit. It took seven years to first define, and then it continued for about 50 years as an ever-changing figure, as Paul’s site of all experimentation throughout the rest of his (art) life. Paul would probe his ideas through the circuit with art collective Raindance (Frank Gillette, Ira Schneider, et al, do see their excellent publication Radical Software that is now made available online), with Bateson’s own granddaughter Sevanne Kassarjian, and with his partner (seminal urban ecologist Jean Gardner), among others, to develop the circuit as a support structure and ‘training’ device for his method of research. As we reviewed elsewhere [on c.(G)], Paul’s work, was rooted first in his Earthscore notational system, and was then followed by the performative practice, or ‘yoga of relations’ he called Threeing (all exhibited as performances and by videos as A Ritual of Triadic Relationships at the Primitivism in 20th Century Art: Affinity of the Tribal and the Modern that ran from the 27th of September, 1984 to the 15th of January, 1985 at the Museum of Modern Art of New York).

251 ‘But in order that anything should be a Sign it must ‘represent’ as we say, something else called its Object, although the condition that a Sign must be other than its Object is perhaps arbitrary, since, if we insist upon it, we must at least make an exception in the case of a Sign that is part of a Sign. Thus nothing prevents an actor who acts a character in an historical drama from carrying as a theatrical ‘property’ the very relic that that article is supposed merely to represent… On a map of an island laid down upon the soil of that island, there must under all ordinary circumstances, be some position, some point, marked or not, that represents qua place on the map the very same point qua place on the island … we shall, or should, ultimately reach a Sign of itself [my emphasis], containing its own explanation and those of all its significant parts: and according to this explanation each such part has some other part as its Object (Peirce, 1910).’ This is the entry citation to the essay ‘A Sign of Itself’ by Paul, ibid. Ryan 1992, 345–346, taken from C.S. Peirce’s essay ‘Signs and their Objects.’
As Paul saw it, the relational circuit served those practices (which were exercised through a hybrid between semiotics, experimental video, and performance art) in a manner similar to how the ‘counterpoise’ (contrapposto) supported the work of the early sculptor, and how linear perspective supported the work of the renaissance painter. He thought of it as a semiotic – that was physically and metaphorically an infrastructure – that would allow him to perceive position, not by direction, but by ‘relation’ to two other positions, as he argues with Bateson in the metalogue above. Paul’s mode of ‘intransitivity’, as that mode of positional topology, was indeed shaped, quite literally by his life-long, self-imposed scholarship on Peirce’s triadic categorical that, for him, described the ‘intransitive relations’ between sensing, reacting, and interpreting; the triadic complex that is crucial to the core discourses of perception, and of cognition.

Similarly, as with Peirce, Paul also relied on neurophysiologist Warren McCulloch [see c.(G) & c.(C)] to formalise the ‘non-hierarchical circularity’ or heterarchy of ‘intransitive choices’ that Paul felt were needed (1) to substantiate the non-directional and topological nature of the relational circuit, (2) to give meaning to worthwhile forms of human life, and (3) to reaffirm our dependency on the environment… all with full acknowledgement of Bateson’s non-binary unit of survival (human-species-environment) serving as a core modus for living… ‘for creating art as if life depended on it’. When Paul refers specifically to ‘intransitivity’, I interpret, not a heroism to save the planet, but a life-long commitment to research, through new art practices, and depose the forms and forces of privilege of the human perspective, to perceive to broader array of multiple, indirect, intransitive relations that make life possible, all the while knowing that such effort would need to occur on unforeseen understandings of space, mediation, and production. That is why Paul turns to the topological forms and dimensions (as discussed by Berlant and Tygstrup above) that could mediate perspectives that are not guided by ‘the explication of language’, but by a ‘self-evident’ triadic that devises a non-Euclidean way of sensing space.

What was most important to Paul was always to operate, to live by a predicate that is *neither* outside nor inside, nor divided by boundaries, but *within* a broad flow as continuum of multiplicities sincerely rooted in a triadic. As McCulloch would state in a speech at the 1965 International Symposium on Communication Theory Research - ‘The relations we need are triadic, not dyadic. Once you give triadic relations we can make *N*-adic relations; but out of dyadic relations, I can’t go anywhere. *I can build strings and I can make circles, and there it ends.*’ 

And, for Paul, and his colleagues and collaborators, with this triadic, flowing quality – through the complex that still is the Threeing practice, the Earthscore notational system, and their Relational Circuit, altogether as a differential topology – a relentlessly pursued, broader infrastructure would emerge. Such topological infrastructure supported them, as well as those of us who have become versed in his claims and practices, and wish to sense life in a manner that allows multiple magnitudes and scales to occur proportionately. It is a mode of living that takes place without the *necessity* of direction, explanation, or even ‘visualisation’, but that instead offers a – ‘practice that would allow us to deal with our current ecological crisis in terms of a heterarchic system of shared perceptions, rather than through a blind faith in set of ultimate propositions that we know, since Gödel, can in no way be ultimate.’

I will not elaborate further on the vast complex of resemblances and of contrasts that Paul explored through Threeing, Earthscore, and the Relational Circuit (as most of it found on the thousands of hours of video tape that are now in the Smithsonian Collection Archive), nor will we dig into the full definitions of what intransitivity may have meant to him personally (even religiously), as that is an entire other universe. But I do want to tell you – from what I learned from him as my teacher, and lived with him through our friendship and collaborations, as well as what I have read from his work and that of his friends and critics – that Paul, as an artist, evolved into a seasoned semiotician, one of a handful of Peirce scholars, and

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253  see chapter Attempting a Calculus of Intention, ibid. Ryan 1992, 47.
254  see chapter Video as Evolutionary Tool, ibid. Ryan 1992, 92.
at that, a skilled reader with unique perspectives on the work of McLuhan, Bateson, Thom, and McCulloch, among others, that are still of great relevance today.

I tell you this, because I strongly believe that, if practised with commitment, Paul’s triadic of Threeing, Earthscore, and the Relational Circuit (which Jean, Sevanne, and others continue to practice and teach with today) could provide practitioners not just with affirmative ways to coherently move away from the recalcitrant traditions of binary structures – from the misogynist and bigoted binary gender norms, to even support in thinking beyond binary formats into more recent quantum versions of computation – but also with coherent ways in which to destabilise privileged perspectives in order to sense the broader array of human non-human relations that make life possible.

There is no doubt that Paul’s proposal is demanding, formal, and even, at times, dogmatic. These are qualities have made the work difficult to distribute, despite his best attempts to overcome such hurdles to popularise their practices. But I would argue that Paul’s work, as it was projected in our collaboration at Documenta in 2012 [see LIST... pp.66-7] just about a year before he passed away on December of 2013, does represent a viable (and retroactive) instantiation of those qualities discussed above, especially in regards to the affects and effects of the evanescent object-relations that make preparations, boundary objects, and the relational circuit part of the topology of Epistemologica that Rheinberger calls for, with full awareness of the cautions that Berlant herself explains in her call for infrastructures. It is on that vector that I strongly suggest that Paul’s conceptions and methodologies for ‘intransitivity’ is what may differentiate, and re-mediate the causal and colonial mechanisms entrenched in the technical memory that science seeks to revert to discover...

In one of my early encounters with Paul, around 2002, he passed on to me his notes that he had then published about the metalogue with Bateson. He drew my attention and pointed to these particular passages:
‘The theory of [Peirce’s] logical types was key in developing Gregory’s understanding of schismogenesis as discussed in the article on relationships and in formulating the double bind theory of schizophrenia. The schizophrenic is one who has habitual difficulty in discriminating levels of logical typing; he is constantly eating the menu card instead of the meal. This condition results from a pattern of upbringing in which contradictory, or double bind messages, are habitual. For example, a parent says to a child, “Go to bed, you’re very tired and I want you to get your sleep,” while the non-verbal message is, “Get out of my sight. I’m sick of you.” The logic of relationships I am working with is not based on naming and classifying, but on positional differentiation in a unique figure [the relational circuit]’ (my emphases).

Paul continued:

‘While Gregory is well aware of the ambiguity of left and right he seeks to resolve that sort of ambiguity through a zigzag of logical typing in which one cannot tell a zig from a zag without labels. I do not think it works. Moreover, to my mind, he has never successfully come to grips with intransitive relationships as articulated by McCulloch in his 1943 paper on heterarchic values. Intransitivity remains an anomaly in Bateson’s thinking’ (my emphases).

Truth be told, I had no earthly idea what Paul meant when he passed those notes to me. It has taken me until recently to begin to put them in some sort of context, given the ample ramifications they would continue to signify. But now I can sense that these notes strongly suggest that it is through Bateson’s seeming omission, or ‘glitch’ to use Berlant’s substrate, that we find a lucid materialisation of the intransitive dimension… not through the mechanical classifications of a scientist, but through the performative explorations, the research, and reflections of an artist.

Paul’s relational circuit does emerge retroactively, i.e., it comes to us from the reverse-engineering of our stroll. It defines the potency of the object-relation for the analysis and display of the social and
its productive capacity for differentiating phenomena in, and for, art & science. In this case, what the relational circuit comes to tell us, perhaps as another entry to our epistemológica, is that its intransitive dimension is of utmost relevance, for it embodies, in Bateson’s own words, the region of knowledge ‘where angels fear to tread, the region of consciousness, aesthetics, the sacred, and the relationships between them, the effort of a practice that looks to answer the ultimate question – onto what surface should a theory of aesthetics be mapped?’

The Liver of Neganthropy

Remember. The surface is technical memory and the parastructure. It is the void of rupture of not-being-there… the colonial effects of post-ontology dissociating Being from a judgement about what is real and certain.

And, as we’ve walk up to it, I turn to the parastructure, hold it, embrace it, and see through her/his/their eyes, and sense through that body, so to dis-play and turn the chasm – to pedestal and agential spectre. To aid us, and to send each other off on that process, before we say goodbye, let’s put a few more support structures on the ethnocentric and technoscientific Epistemológica, so to take its role as mere typology and expand it to a nascent method and careful practice of epistemológica. We begin the push by re-membering Stiegler once more…

Our return to Stiegler begins by offering a review of a two-week seminar I attended on the summer of 2016 in Paris. The seminar was titled From German Ideology to the Dialectic of Nature, and it was conducted as a series of daily lectures by, and discussions with, Stiegler. It all began with a lecture titled ‘The Illusions of German Ideology’ leading Stiegler over the following two weeks (with about a total of eight more lectures) to work towards a detailed elucidation of what he calls the Neganthropocene. During the first hours, he listed the titles and authors we would
study, making strong references to Leroi-Gourhan’s landmark work *Gesture and Speech*, while commenting on technics and ‘exosomatisation’. In the early moments of his entry lecture, he cited this passage:

‘At the stage of the primitive Anthropians, it was as though the tip of a new pyramid – inverted (or to use the Teilhardian image, “reflected”), more and more gigantic, made up of all the equipment exteriorised in culture – had come into existence on top of the animal pyramid which is and remains the pedestal whereon all human behaviour rests. Whereas the base on which we stand is and must remain the osteomuscular system of the last stage of animal world, the superstructure is wholly artificial and imaginary, born of the interaction taking place externally between the two poles of creative activity – the face and the hand – in technics and language.’

Considering that I had been working to shape the notion of social pedestals, with a focus on greenhouse superstructures, the citation provided much needed momentum. It encouraged me to continue to polemicize and unfold the socio-economic implications and technological appropriations of the Marxian *superstructure*; to contrast the violent, colonial dualisms I found being implied by ‘greenhouse’ as phenomenotechnological pedestal for natural science and its history; and to explore what could be a pharmacology of ‘greenhouse’ about differentiating and re-mediating the rupture between humanity and nature.

With that encouragement, on the third day of the seminar, I, along with colleague Kendra Atkin (PhD from the University of Southern California) were offered to present summaries of our respective doctoral qualifications. I indeed presented ‘greenhouse superstructures’ as *anarchives*, and then treated my remarks to incorporate the term *hypomnēmata* that is so prevalent in Stiegler’s discourses, namely suggesting that ‘greenhouse’ potentially becomes ‘*a pharmakon to the memory of environmental form*’. Atkins (who spoke of her brilliant research on post-perceptual cinema) and I decided to then, together, make a
small collaboration, connecting both of our pitches to Stiegler’s own study of Prometheus’ Liver as the self-replenishing mode for pre-serving, perceiving, and projecting memory. This mythology of the liver appears in one of the latter chapters of the first volume of his trilogy Technics and Time. Kendra and I did an adapted reading of the chapter and reflected on how the ‘liver’ is a provocative metaphor for perceiving the processing of (technical) memory with the environment. We did so particularly by considering it to be, directly, an organology of distributed sites that are yet to be shared, across humans, across species, across ecosystems, considering its implied regenerative qualities and detoxifying functions mythically, chemically, and as (embodied) metaphor.

In this particular chapter (titled eponymously Prometheus’ Liver), Stiegler deliberately speculates on a ‘prephilosophical and premetaphysical’ condition of technics. He is looking to nuance Protagoras’ narrative of the myth of Prometheus and Epimetheus from the Platonic dialogues, and to primarily ‘narrate’ the externalisation of knowledge, and its retention as memory, in terms of life before humanity, say, ‘when humans banqueted alongside the gods and goddesses.’ Stiegler is trying to tell us of a world that was not subject to the metaphysical opposition of logos and tekhnē, where the studious understanding of technics was not an opposition between two worlds, but a composition of topoi or “commonplaces” that instead constitute the edges of mortality – as being immortal, as being unaware of death (animality), and then aware of technical life as death. As Stiegler elaborates the argument, he turns to historian Jean-Pierre Vernant, extensively citing one his readings of the poems of Hesiod, the Theogony, and Works and Days. One of the two sections Kendra and I cited was the following:

‘In a passage while Prometheus lays bound…, the Titan enumerates the qualities he has bestowed on man: “I stopped mortals from foreseeing death”; “What cure did you discover for that ill?” - the chorus asks. “I sowed in them blind hopes.” - Prometheus replies. It is not the foreseeing of ill, the foreknowledge of death, which carries the name here of Elpis; on the contrary, Elpis,

housed amongst humans, as is Pandora, constitutes through her very blindness the antidote to foresight. She is not a cure for death, which has none, since, whatever one does, death is inscribed in the course of human life. Finding her place within the very seed of mortal life, Elpis can balance out the consciousness of death with lack of knowledge of the moment when and the manner in which death will come and take his life. 257

After our reading, Stiegler responded with ‘Greenhouse…. a machine that works with entropy’. He proceeded to intensely discuss how entropy has been inadequately addressed in philosophy. He also discussed that the reasoning for his reflection on Prometheus’ liver, as placeholder to the idea of ‘organology’, was in principle a deliberation on what I interpret to be a call for a practice for ‘organs’ that may confront and remedy the disproportions of entropy (of perception, memory, and knowledge; by their commodification as industries, and the ensuing, destructive impact such disproportions have on the habitable environment). I gathered from this particular encounter, that Stiegler was encouraging us to become acquainted with the notion of ‘neguentropy’ (negentropy, in English), to think of that organ-making practice as a resistance and counter-force to diffuse, dissuade, deter the fundamental, and disproportionate entropy of the ethnocentric Anthropos. Thus, the emergence of the term he calls neganthropy, as the central and evolving theme across his lectures, and as the topic of the seminar’s closing lecture (Again, these are my words-interpretations).

In other words, to me Stiegler yearns to turn entropy, from thermodynamic object of concern, to a methodology – from a ‘what’ to a ‘when’. In a remarkable passage on that last lecture, Stiegler begins by stating that ‘taking care of a child is neguentropy.’ That statement was then followed, again, surprisingly (and I paraphrase), by his call to procure ‘social sculptures’ (in regards to Beuys, as he did in his 2008 ‘Anamnesis and Hypomnesis’ essay), suggesting that that kind of collective, ‘sculptural’ action can be another form of ‘neguentropy.’ In this sense, again, negative entropy becomes a method for living in the context

of Global Warming as a measure to try and counteract the losses of species, by extraction and extinction, and the losses of knowledge-skill, by proletarianization.

These elements of toxicity and entropy were also introduced in that last lecture, not just in the thermodynamic sense, but in the context of technoscience and Gestell. It seemed clear that he wanted to reiterate his elucidations about the toxic entropy of the current social misinterpretations of technology, and about the technocratic enframing exacerbating planetary decay. I interpreted such reiterations to politically emphasise that the points of disproportion in the processes of decay may very well just be mere contradictions driven by the automatized and unchecked domestication and commodification of the environment and of knowledge itself. As Stiegler mentioned in that reference to Leroi-Gourhan [see c.(A)], agriculture and its eventual industrialisation (which moves in parallel with the industrialisation of memory, and where I elsewhere claim to be marked by the construction of the Roman Specularium in Capri [see c.(E)] is plainly evident to be the primal lineage of technics, as the proto-historical exosomatisation of the human 'spirit' of Anthropos (as Geist and as Doppelgänger as the figure that appears to itself). 258

Again, that ghostly spirit, that parastructure, is the assumed, ‘proto-historical’ dimension of technical externalisation and of domestication that is at the very root of the concealment of mythical and colonial violence. And ‘greenhouse’ – as its ultimate industrial representation, as the rupture-manifested, as the ‘extra-terrestrial’ privilege in the super-structure, and what conceals its own collapse – is what lies at the heart of what the gods came to bestow upon the privileged and powerful, as Elpis… where we find that which ‘can balance out the consciousness of death with lack of knowledge of the moment when, and the manner in which, death will come and take his life.’

Yes, that hindrance could be an augmented form of différance (for perspectives from the Northern hemispheres) when Stiegler himself adamantly states that the ‘static oppositions’ of dialectics are fruitless and that thus ‘differential compositions’ must be engendered. The core problem

(reason why Stiegler is now invested in a project to literally reinvent the internet) is that the complexity of ‘differential’ space is exactly that which is between the psychic (mental image) and the collective (shared perception) as ‘memory’. Therefore, the moment digitalisation comes into the proverbial (world) picture, this process of *externalising memory becomes the ultimate* ‘farming’ *product*, and, conversely, memory’s utmost weakening… Through the digitalisation of memory the impact of colonial trauma is exponentially heightened and indiscernibly concealed…

‘A Marxian position on surplus would hold that it is an instrument of production and exploitation that has to be visible in the system of economies. In the post-ontological world the visibility of data surplus is violently repressed. Furthermore, it is continuously traumatised by the unbuilt coefficient of self-incomprehensibility and insecurity.’

The flows of memories (data, knowledges and experiences) between our brains (as shared neuro-chemical processes) – that are *mediated* by *hypomnēmata* (like smartphones) – and what’s thereon flowing through and above that so-called cloud (namely the network of the physical, high-electricity consuming, grounded, and very secret data centres, called data “farms”) is what seems to both intensify and thin-away the haunting, ghostlike, and spectral duplication of disparity beyond any modern projection.

Now, conjuring the ghostly disparities and turning them into agential spectralities is, I find, analogous to the worthwhile concerns shared by feminist, post-colonial, and/or decolonial acts and practices of ‘mattering’, not unlike the ones we discussed above, particularly in the writing of Blanco and Peeren, no less of Star, Berlant, Sofia, and de la Cadena before. But, such acts and practices would not seem fully equipped to engaged the epistemic challenges of perception unless a broader understanding of today’s melange of memory, digital or otherwise, is incurred. Otherwise, the perceiving of the intensified object-relations of memory, as a *mnemotechnic*, would continue to deform into something ever more elusive… it is the complex itself of disproportionate decay in

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memory-retention that is at stake. Its historically unforeseen manifest, as the relinquishing of our memory to the cloud, that presents a new and strange blurring between our mind (psychic), the mnemotechnologies (technic), and the electrical circuitry [collective (biological and computational)] that is presenting the most intense challenges to the important, if indispensable processes of mattering. Memory becoming digital confuses the boundaries between traditional notions of interior, exterior, and perception. And, the complex constellation that Stiegler, as well as Blanco and Peeren do indirectly, attempt to stabilise for display – as that new, squirrelly, light-speed flow of ‘reality’ – surely appears to only expand and dither invisibly as a paranormal condition of post-ontology... one that is total and absolute, nonlocal and nonrelational in character and in body. perhaps becoming an entirely separate occurrence to perception.

That unforeseen kind of spectralised flow of memory – which extends from, but is not to be confused with, the obsolete phantasmagoria of modernity – is the history of human memory as a grammatisation that offers no interiority, that precedes and succeeds exteriorisation. That unforeseen phenomena extending from modernity is antithetical to the psychical and social individuation that Simondon defined, where the modern technological apparatus for memory, as mnemotechnics, could re-emerge as material for the ‘associated milieu’ of individuation.

Simondon’s understanding of the process of individuation – as it refers to human, animal, natural, and material processes – takes place without a subject. It is a grammaticised movement, not unlike the political autopoietic (as cautioned by Berlant), where the dynamic movement brings about identity, or position, individuated without the subject. What individuation then traces is the unadulterated movements from the virtual to the actual as movements that characterise the continuous becoming of the individual. This kind of affirmative movement is becoming more and more significant when differentiating identities – human, non-human, gendered and otherwise – in the contexts of digitalisation as well as what we would now call the Anthropocene. I imagine (and I use imagine carefully) that individuation is surely applicable to the feminist and decolonial concepts I am here looking to research, learn and apply, as well as to demonstrate, by way of our walk. This is no less because the movement
of individuation becomes critical when we register memory to be the matter for mattering, that is ultimately negotiated, albeit spectrally, by our associated psychic and collective milieus. That is, if the affirmative potential of individuation takes place, it may then constitute a broader, and desirable mode of ‘transindividuation’, i.e., the potential for associated, not flattened, individual and collective memories to occur, defining moments of group individuation, something I would extend to the potential of multiple perspectives, across marginalities for living.

‘The circuits of transindividuation in which the life of the spirit consists, within which care-ful thought [pansée] presents itself in highly diverse forms, are induced by the shocks provoked by successive types of tertiary retentions and of the différances in which they each time singularly consist in, and as the history of, the supplement; thus constituting the organogenesis of pharmaka […] which is the evolution of the technical forms of life.’

Again. Maintaining, say sustaining attention to the manifold effects of depersonalised dissociation as the toxic effects that illusorily, if terminally disrupt the potential for transindividuation to occur is paramount. I, for one, wish to embrace this awareness… as much as I am careful not to suggest it is yet another unified and hegemonic effect to commodify invisibility as aura. Instead, what I am in search for – knowing that I am coming from across the Atlantic – is the fomenting of affirmative and auratic demonstrations of object-relations. Such demonstrations can constellate an ‘ecology of associated hypomnesic milieus’ that may yield agency – say, a weak messianic power [see c.(B)₅] of spectrality – towards the autopoetic movement of transindividuation.

Stiegler does argue, relying on Whitehead, that such agency can cause productive (and affirmative) ‘ruptures’ to the force of the knowledge economies and their industrialisation of memory that are leading us down the messianic march towards Global Warming. And I will acknowledge such statement, even if it seems to contradict the spirit of our own walk. But I do so because his intent is taken in good faith, if
for no other reason that he does specify these ruptures are ‘bifurcations’ (again, a term that is also germane to Jorge Luis Borges, by whom our nonlinear stroll is largely inspired by). But I do so only to emphasise that I see such interruptions as ‘indirections’ [see c.(G)] and ‘divergences’ [see c.(B)], that ultimately, differentially dis-play the pressing changes to our current, toxic, industrial ‘growth’ models.

Diverging a way (through bifurcation) from the technoscientific mode of (hyper-) speculation – as the now-naturalised mode of capitalism – can continue to thrive, as long as it fully fosters individual and collective protentions, regulating, rather than suppressing, openness to indeterminate futures for living. The suppressive effects are otherwise part of the strange double-bind, if not mass-psychosis we seem to be collectively experiencing (at least at the time of the submission of this PhD). Stiegler projects the need for industrial transformations of such toxic model of free-market capitalism by making a pharmacological turn towards new forms of valuation in all regards, but most importantly with respect to the resources and knowledges that gravitate from ‘care’ as a core transvaluation of our current toxic values. That desirable movement that Stiegler advocates for looks to break with the destructive hold over the horizons of imaginative potentials that globalisation has sequestered, as manner in which to take us away from the environmental crisis. The process is one of an organological becoming, which is less about novelty and innovation, and more about re-appropriating divergent perspectives for living as a resistance against our disproportionate entropies: as detourments from the messianic destining of the Anthropocene, away towards a Neganthropocene.

Stiegler conceptualises the ‘logic’ of organology and pharmacology within the context of entropy and negentropy. He gives both terms a much broader meaning, applying them to all the movements of individuation, and by extension to the spectral agency that may come with transindividuation. Stiegler leans on the notions of ‘growth’ proposed by Georgescu-Roegen [see c.(A)], contrasting them against Schrödinger’s own. That contrast is centred around the potential of exerting ‘low energy’, in Schrödinger, by referring to the ways in which thermodynamics does allow for the maintaining of low entropy as a ‘negentropy’. Whereas for Georgescu-Roegen, the analogy between thermodynamics
and economy is likewise drawn from low entropy, as contrast to the way human excess-as-waste is a high entropy. Here, to resist the impulse of extraction, leaving inanimate the state of standing reserves, of natural (and labour) resources, is considered to be key characteristic of low entropy. Stiegler sees that ‘economic’ maintenance of energy as a model for contrasting thermodynamic flow and the enjoyment of life based not just on the problematic externalisation of knowledge, memory, and their instruments. Stiegler also ‘sees’ that it is possible, if necessary, to produce a counteractive, ‘neguentropic’ economy as a reorganisation of organs and organisation, as a new ‘organogenesis’.

The ethnocentric, anthropogenic movement away from individuation, as a technical form, is neither organic nor organological. So, in such awareness, Stiegler argues that if neguentropic and entropic technics become an irreducible pharmaka, as cure and disease, as one that can make-visible, and regulate both negentropy and entropy, then negentropy as a thermodynamic concept proposes a potential process, whereas entropy then obfuscates and accelerates a loss of that potentiality. That generalised toxicity of the current anthropocentric configuration of industrial organology (that includes our own epistemic and neuro-aesthetic ‘knowledge economy’) in terms of Being and entropy, gives rise to the mass-deterioration of our habitable, planetary ecology. That is why Stiegler sees the Anthropocene as an entropocene. And for Stiegler, to transform it, one ought explicitly call for a neguentropic transformation of that putrescent, organological machine of the Anthropos, which has until recently been largely neglected. Once more, that neguentropic transformation is the Neganthropocene.

Reading and listening to Stiegler ultimately encourages me to consider that being part of that transformative epoch he is calling upon, is to become neganthropos. I call for you and I to consider and sense that call, based perhaps on the following hypothetical presupposition I would like to offer…

...if our lagging faculties of memory are bystanders to the violent flattening of history caused by the privileged, objective phenomenotechnologies of technoscience, then the diversified demonstration of our unstable flux of memory takes precedence. It is how we foster the potential for unforeseen methods of epistemic perception and diplo-
macy (see Stengers in *Exegesis*) for multiple, transhemispheric perspectives.

To enact a kind of *neganthropy*, as an alternative to technology, seems to be a call to arms that needs to be answered. That call is resonating, here, before you, as my ardent deposition of the *Greenhouse Parastructure*, to breathe again by way of a careful practice for affirmative and afformative kinds of *epistemológica*.

### Walking through the colonial parastructure of the archive

But to foster transhemispheric perspectives, we still ought consider the question Bateson poses, ‘*onto what surface …?*’. What I mean is that it is not to be answered but, if anything, it ought be adapted to ask, not ‘what surface’, but onto *when infrastructure*. Not just because we ought make it a habit to begin to think, as per Star and Berlant in terms of affective infrastructures, but also because, even if reality were to be a ‘surface’ – as the ‘flattening’ of history, or of Flattened Ontologies, or even if we were to recognise the *plane of immanence* as such – I’d say we would still be confronted with the violent, unsteady, and messy, obstacles and ruptures that defy the uniform, bubbly, glossy, glassy, surface metaphor. Most obvious to me is the vertiginous, severing surface of the greenhouse that we are obstructed by (which we are here to unflatten, thicken, and depose). The flow of the diverging and diverse relations about remediating the memories of natural history and of natural science hardly feel like something that would operate on, or as, surfaces, or even as ‘hypersurfaces’. I studied under, and then worked for a couple of years with philosopher Stephen Perrella in the 1990’s and his heartbreaking and untimely passing in 2008 left many of us with a lot of questions that only he could now unearth. His provocative legacy of *Hypersurface*[^261], in regards to the virtual, digitalisation,  

media, computation, and parametrics in philosophy and in architecture is worthwhile investigating. But I am not going to take that turn because I find that Stiegler’s work on memory has leapfrogged over those architectural issues and surely addressed the head-on the philosophical ones. So instead, I will move forth to tell you about how I aim for memory to be dis-played, beyond the surface of ‘greenhouse’, to operate as a thickened, intransitive, decolonising interface for environment.

Earlier, I presented you with two concepts that assume the impact of digitalised life, and contrast the political and observational challenges mainly from socio-environmental perspectives onto potential, common modes of perception. I did so because I believe that these turn the matter of the virtual, from an opposition, to an irrelevance, especially in regards to perception today. I mean, again, for instance, that folk politics and the hyperobject, each in their own way, address the conflation of problems that haunt affirmative persuasion and scientific observation reinforced by the growing blur between physical life and digitalisation, diluting the ‘virtual’ into a blur that no longer holds any real value. This agitated, haunting blur – perhaps foreseen best by either Heidegger’s post-ontological transformation of timeless truth into eternal transience (Wesen), or by Benjamin’s dynamic ‘origin’ contrasting the phantasmagoric bourgeois (Ursprung), or by Derrida’s ‘hauntology’ of ghosts of unlived memories coming from the future to talk to us in present time (Revenant) – is what most insidiously challenges the registers of epistemic and perceptual coherence, challenging every part of life, still while not entirely losing its spectral power or agency. That blur is an unforeseen, ghostlike, ‘paranormal’, and ‘paralogical’ system of states of reality we must continue to learn, to register, engage, and if possible, transform.

You and I come to understand that the once seemingly stable safe space for modern observation (both from where it has been imperially protected, and from where we are supposed to stand on to see ‘truth’, as phenomenotechnology) is particularly threatened. For better or for worse, it is not just because of the critical efforts laid upon the disparities and injustices Western observation has perpetuated, but also because of the confluences that such criticalities confront in new and far more elusive forms of ‘mediation’ (physical—digi-
That unprecedented confluence is destabilising the very nature of observation, and unquestionably affects the construction of knowledge, if of positivist reality; how that destabilisation is redistributed to register injustices, and thereon a sense of care for the planet, is what becomes for me the present imperative.

The imperative hinges on moving beyond those Western norms of truth, fact, and objectivity through the manifold intersection of multiple perspectives. The deep entrenchment of those norms, and the ensuing mass-process of their redistribution, leave us struggling to identify, trust, and address not just ‘what’ needs to be identified and ‘seen’, but also ‘when’ to justly research and develop the processes that may yield other reliable modes and props for observation and for demonstration. We could spend more time talking about the situated knowledges of Haraway, or of Sousa’s trans-scaling, or of de la Cadena’s divergent perspectives. But I prefer we take these last moments of this convolute to revisit work that helps me in the endeavour of asking ‘when’ instead of ‘what.’

To do so we arrive at the collaboration between Dutch theorist Esther Peeren & Puerto Rican theorist María del Pilar Blanco [see c.(A)]. They focus intensely on the complexities and potentials of spectrality as what I would deem to be analysed, contextualised, and portrayed as infrastructural analysis (in terms of Star and Berlant). That association is based on how Peeren and Blanco critically engage and look to further transform the contemporary problems of common perception through postcolonial and decolonial methods beyond techno-scientific means. They analyse the geopolitical problems of economic and environmental injustice and violence that conceal and ‘disappear’ entire social and ethnic groups and structures, rendering these subjects not just invisible, but without agency (something we can seamlessly adapt to the plight of the non-human). Simultaneously, their works share a set of deliberate, active dimensions that suggest adaptable potentials about how to ‘turn’ that transparent, colonial violence into an affective agency, how to turn that traumatic invisibility into a transitional value – a transitional potential to transgress the very power structures that deliver the violence in the first place.

We can register that affirmative agency and potential as spectrality.
As an extension from her collaboration with Blanco, and as we discussed elsewhere, Peeren explores the actionable notion of the ‘spectral metaphor’ (an operative ‘marginality’ if we think of Star) that is described, in part, as — ‘strategies [that] may be devised to mobilize different aspects of the ghost in order to come to haunt or find agency in invisibility’ [see c.(C)].

The spectral agency of that kind of invisibility, in regards to ghosts and hauntings, is about a concern over post-colonial criticality. Peeren and Blanco engage that concern by that method of ‘mattering’, i.e., of activating a ‘double imbrication’ of materiality as immaterial, and of its counterpart, the immateriality of the material. This binary ambiguity of infinite gradients is of central concern to post-colonial scholars because it challenges the individual and collective understandings of history, and of memory. That is particularly relevant to how the mattering may occur according to the possibility of fostering multiple perspectives along that range of infinite gradients; of not just ‘seeing’ through other’s eyes, but of sensing through those many collective senses, through those many positions and perspectives. With that range and sensory embodiment in mind, I hereon aim to probe that positional and perspectival potential of spectral agency by dis-play them. I do so as manner in which to contrast the aforementioned, positivist problems of naturalisation and of the resulting misplacement of the concrete. And, I have been doing so by taking cues from Peeren and Blanco in order to activate the spectral condition of the greenhouse building technology, and its metaphorical compounds, as archive, and thereafter as anarchive... as dubious container of natural history. I have, and will continue to iteratively question the role of ‘greenhouse’ as master phenomenotechnology to conserve and display the concrete, and the normative colonial forms of history that shape natural science.

In general, those of us educated in Western regimens (albeit, in my case, deeply influenced by the traces of my Caribbean and Latin American life and education), have been trained to conceive of the ‘superstructure’ of history – particularly in regards to the craft of its construction, of historiography – to absorb, and to venerate, the archive as form for establishing order given the seeming firmness

and tangibility it promises [see c.(A).2]. That promise of tangibility has been intensified to a new and indefinite level with digital storage and its social mediation. It is now ingrained, and deeply naturalised, given that the archive, in its digital form is entrusted to withhold the full control over what ‘matters’. Such intensification of promise and of void capacity only further withholding its death drive, by also intensifying the threat to limit access, to conceal, or to erase whatever the archive holds-firm from within. That is because again, as per Derrida, the digital only but heightens ‘the structure of the archive is spectral. It is spectral a priori: neither present nor absent “in the flesh,” neither visible nor invisible, a trace always referring to another…’ 263 The question then is: what is the ‘flesh’ of what is neither present nor absent? Or shall we ask, also, not in terms of ‘what,’ but in terms of ‘when’? The latter goes to suggest that we ought speak of that flesh of the archive in affective terms of ‘when infrastructure’… as our core and most elusive object-relation, because there, and then, we find memory. That is the flesh.

As per Peeren, ‘[c]onceptualising these interactions [of spectralised memory] in terms of hauntings that feature more and less powerful ghosts, as well as would-be exorcists, helps to highlight the different, variable degrees of force particular memories, histories and archives exert in this dynamic [of spectralising history and the archive].’ 264 And that spectral protocol is to us what will here give meanings to the decolonial act as an open-ended ethical and political processes involving both materialities and immaterialities. Why?

First, because memory and its spectralising matter, is not about rendering itself impervious to assessments of validity, but about envisioning memory as the potential for perception and, perhaps, for knowledge; memory as an open-ended ethical and political, albeit affirmative, capacity involving meanings, materialities, and immaterialities that withhold the trauma to be re-membered… to cope living with the future, to fore-get. Second, because such processes facilitate the transcultural and multidirectional perspectives that allow for fair redistributions of epistemicity in the form of nego-

tations, cross-referencings, and of intersecting marginalities. And third, memory allows for the polemic instability of digitalisation to be directly addressed on the same plane of analysis as that of physical and electrical materialities (even as the blend of neurochemical reactions) that are traditionally associated with the concrete, helping us leap over, and decolonise that abysmally virtual/actual chasm of perception.

From Epistemologica to epistemológica

It is necessary to bring you here, so to consider the forces that shape environmental form and their perception, particularly to share that field and purview from my Caribbean perch. I sense in retrospect that what has been here dis-played are the Western conceptions of phenomenotechnologies as logical forms. Through our walk, as a practise-based research approach, I have worked to polemicise and decolonise those logical forms by loosely taking license to reverse-engineer their basis, breaking them down (at least partially) into analogues of their own pre-phenomenological, even mnemotechnical extensions on the timeline of the Anthropocene. And, that is how we arrive at our critical intersection where, and when we may begin to sense the turn. The transition away from these dispassionate placeholders of analysis, of phenomenotechnologies, reveals their concealed colonial drive, as well as their place in Rheinberger’s lost list of Epistemologica. And, on that marginal path, we may turn, not closer to a cold logic and terminal destiny, but to a loving distance and study. Logos as a diversifying, care-ful practice of display for healing cuts, for remediating ruptures, and for nurturing object-relations. A careful practice of epistemológica.

It is at this intersection, before leaving, that you and I briefly stand and pose the following questions:

· why does a careful review of technoscience require humans to depose and decolonise perspective privilege?
what does it mean to diversify technical memory, and to unfold that field onto protocols of human-non-human, multi-perspectival perceptions?

and what are the parallel social, economic, and geographical changes that need to occur in order to remediate how we fairly foster life, to live, on this the planet?

We take these questions with us, because, at least for me, from my Caribbean perspective – literally, actively, unmetaphorically – pursuing those questions everyday may allow all else to continue to occur.

The transition from a neglected, technoscientific typology of phenomenotechnologies – of Epistemologica – to a broader, more generous, careful practice of epistemológica is a diverse manifold of ways to give forms and forces to these questions, challenging the destining of Global Warming.

(Fig.115) With Callum Harper reenacting ‘A Crème de Menthe. A Rusty Nail. Why Intransitive?’, at The Institute of Endotic Research, Berlin, from Anarchive: Memory #2, 2019. Source photo: Sandoval & Busch.
POSTSCRIPT AND REPORT OF ANARQUIVO NEGANTRÓPICO
August 2019 - ongoing
Herlev, DK
POSTSCRIPT

During our stroll we have indirectly and metaphorically walked through ‘greenhouse’, leaning on it as theatre and support structure for a loving and deliberate display of the toxicities and contradictions of advanced-stage capitalism and its ancillary illness Global Warming. It has been a feverish effort, from my Caribbean perspective, to diverge from the still-largely unchecked traumata of hemispheric superrepression.

Now, Derrida says that suffering from archive fever...

‘is never to rest, interminably, from searching for the archive right where it slips away. It is to run after the archive, even if there’s too much of it, right where something in it anarchives itself. It is to have a compulsive, repetitive and nostalgic desire for the archive, an irrepressible desire to return to the origin, a homesickness, a nostalgia for the return to the most archaic place of absolute commencement.’ 265

The attempt to transform of ‘greenhouse’ has been a failure, in that the effort has only but intensified my restlessness. But over the course of our walk, have also been able to intensify that initial intuition, that ‘greenhouse’ is the anarchive.

‘Greenhouse’ is the post-ontological embodiment. To keep probing it is to keep processing the questioning of the ethnocentric trauma…to be re-membered (to fore-get). And as a resistor for memory stemming from its anarchival quality that ‘greenhouse’ generates a gravitational field, an auratic form from which the parastructure can then emerge, not as a contradiction, but as a spatial and agential spectrality… precisely for living through the post-ontological age.

With that, I invite you to visit the referential materials that will here follow, as well as...

the PhD’s ancillary installation *Anarquivo Negantrópico* at Gammelgaard Art and Cultural Centre in Herlev, DK.

For more information go to the *Intransitive Journal* at [http://www.intransitivejournal.org](http://www.intransitivejournal.org)

(Fig.116) Non-binary artist Callum Harper performing *we(‘):re* on the Neganthropic Anarchive, 2019. Source photo: Richard Krantz.
Breathtaking Greenhouse Parastuctures
ANARQUIVO NEGANTRÓPICO
[ANARCHIVE, NONSPHERE XVII]

ANARQUIVO NEGANTRÓPICO is the installation component to my PhD. It serves as open-ended conclusion to the doctoral work, as well as a beginning to the continuation of my practise-based research and experimentation. It is sited on the grounds of the Gammelgaard Center for Art and Culture in Herlev, a suburban / rural periphery of Copenhagen, Denmark. It plays as testing ground and interface to processes-forth the material we have visited throughout the book component (here before you) and that is also documented on the online component (Intransitive Journal). Its installation was a year-long process of collective events (Memories) that started in August of 2018, highlighted by a two-week intensive workshop for students of Konstfack during the summer of 2019.

Anarchive, composed mostly from the materials of my previous installation Nonsphere XV: Earthscore Specularium, is conceived as a ‘liver’. It is an alternative type of remediated greenhouse, and social pedestal that primarily aids in supporting the quality of the water for plant, animal, and human life. It is installed as an open medicinal garden to enjoy and nurture daily life, to hold events, and to provoke alternative actions about biodiversity for the area, and for those who visit. The following pages will present to you some photos of the installation as well as a few excerpts of the installation catalogue (or fanzine) that was given to the public during the opening of the installation on the 1st of September of 2019.


For video documentation go to [http://www.intransitivejournal.org]
WHAT THE ANARCHIVE?

Anarchive [ANARQUIVO NEGATRÓPICO] is a public art installation for visitors of all ages. It is situated at the Gammelgaard Art and Culture Centre and it is a work by Puerto Rican artist Luis Berríos-Negrón. Located on the edge of a small pond west of Gammelgaard, the installation will serve as a small water harvesting station and medicinal garden. Anarchive is centred around a small, site-specific, solar greenhouse, with three adjacent terraces for action, play, and contemplation.

Not unlike a cleansing organ, or ‘liver’, it is offered to the Herlev community as a small-scale way to improve the quality of water, fostering the plant, animal, and human diversity around the pond. More specifically, Anarchive will revitalise water doused with rosemary essence distilled on-site. This water, the artist calls Memory Water, will be used to irrigate the plants hosted by the medicinal garden and will be free on tap for children and adults alike.

Memory Water is free for you. It is the principal medium intersecting the technical, human, and non-human worlds of the artwork. Water, as the building block of life, is what brings these worlds together, proportionately, to resist and transform Global Warming.

(Fig. 118, opposite) drinking from Ritual for Water by Freja Dahl, Randi Kjær and Martha Skytte, with the public at the opening of Anarquivo Negantrópico. Photo Brian Buchard.
WHEN THE LIVER?
(Fig. 119) Nina Simone, photogram of video performing Ain’t got No live at Central Park, 1968.
Ain’t Got No, I Got Life

I ain’t got no home, ain’t got no shoes
Ain’t got no money, ain’t got no class
Ain’t got no skirts, ain’t got no sweater
Ain’t got no man

Ain’t got no mother, no father, ain’t got no culture
Ain’t got no friends, ain’t got no schoolin’
Ain’t got no love, ain’t got no name
Ain’t got no god

Hey, what have I got?

I got my arms, my hands
my fingers, my legs
my feet, got my toes
I’ve got my liver *

Breathtaking Greenhouse Parasutures

Fig. 120

Relational Circuit
(Fig. 120) Relational Circuit (a.k.a. Relational Liver). Concept by Paul Ryan, illustration by Gary Allen. Source: Paul Ryan.
One afternoon in 2011, Paul Ryan and I were walking the upper west side of Manhattan. I noticed Paul was not well. It was odd, he was always sharp. I asked him what’s happening. He started talking about his life and his vices, which led me to talk about mine. After a long and unforgettable conversation, we agreed that we had been very bad to our livers. Later that day, we were working on selecting and revising which drawing, of the many he had, to represent the Relational Circuit on the Threeing installation for Documenta (2012). The conversation prompted me to say that what we really needed was a ‘relational liver’. He laughed uncontrollably. Made me happy to see him like that, because he was really not feeling well. He passed in 2013, but his liver remains.
“Why the liver?” It is an organic mirror in which divinatory hermeneutics is practiced, in which, during the sacrifice, divine messages are interpreted. And it is Hermes who announces to Prometheus his punishment. Organ of all humors, of feelings of all situations, because it is the seat of the “feeling of situation,” the liver is also, as a mirror of the ceaseless mortality—which never occurs—of the body and the heart, the mirage of the spirit. A clock, its vesicle conceals those stones that secrete black bile, *melas kholie.*

(Fig. 122) Paramodular greenhouse is a solar calendar. Informed by solar angle analysis of site and available material inventory (see next spread). Source: Berrios-Negrón
(Fig.123-5, above) 3d inventory of recovered materials from Earthscore Specularium (2015) produced as initial exercise for students to reconfigure into the Anarchive. (Above right) water flowchart. (Below right) solar analysis for optimising solar transmissivity, from solstice to solstice specific to location Herlev Denmark. Source: Berrios-Negrón
(Fig. 126) My partner Maria Kamilla preparing the site for Memory #01 of the Anarchive, with the Sun Sail (Vela del Solar), 2018. Source photo: Lene Harbo.
(Fig.127) Ectoplasmic Materialism preparing the site during Memory #01 of the Anarchive 2018. Source photo: Lene Harbo.
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(Fig. 139) Drone view of the Anarchive, 2019. Source photo: Berriós-Negrón.
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(Fig. 140) Diagram for the public at Anarchive, 2019. Source: Berrios-Negrón.
NONSPHERE XVII: NEGANTHROPIC ANARCHIVE
[ANARQUIVO NEGANTRÓPICO]

ANARCHIVE is a public art installation and medicinal garden by Luis Berríos-Negrón initiated in August 2018 that will evolve through a series of lectures, performances, sculptures, props, installations, and infrastructures.

GAMMELGAARD WETLAND
www.gammelgaard.dk

By Luis Berríos-Negrón
with Maria Kamilla Larsen
and Freia Pilar Negrón-Larsen

MEM#05 OPENING FOR THE ANARCHIVE

01.SEPTEMBER 2019 SUNDAY 13:00-17:00

CONTRIBUTORS:
Alexander Höglund (inst.)
Callum Harper (perf.)
Dance for Plants (perf.)
Ectoplasmic Materialism (inst.)
Felix Becker w/Sisters Hope of Sensuou Society (talk)
Freja Dahl Kofoed + Martha Skytte + Randi Kjær (ritual)
Ida Bergman (ritual)
Lisbeth Skytte and the Gammelgaard ceramics group
Richard Krantz (inst.)
Sebastian Gatz (inst.)
Spyros Theodoridis & Sonia Ntova (talk)
Yohanier + Ayi Solomon + Ricardo Castillo (perf.)
and Friends from the Seventh Colony
With **Sergio Montero Bravo** and the bachelor students from Konstfack’s programme of Interior Architecture and Furniture Design


Pages 686–729 are from the ‘fanzine’ that was given to the public as catalogue for the opening exhibition of the *Anarchive* at Gammelgaard on 01.sept.2019.

For more information and to download the fanzine go to at [http://www.intransitivejournal.org]
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ACKNOWLEDGMENTS

The PhD is dedicated to my beloved daughter Freia Pilar and to my partner Maria Kamilla Larsen. To my parents Nadja and Luiso, sister and brother in law, Liza and Frankie, to my great-aunt Irma, my godparents Ilia and Joe, and my extended family who live in Puerto Rico and Denmark, for your energy and unconditional love.

Likewise, to the Stannow Kirchmeier family – Karin, Matilda, Moritz, Tora, and Ole – whom are partly patrons of this work, for housing and supporting me; not sure how I will ever repay your generosity.


I want to thank Jean Gardner and Tata Mutá Imê, as well as Ada Bobonis, Alexandra Hopf, Caroline Jones, Carson Chan, Claire Pentecost, Coco Fusco, Daniel Sabóia, Dennis Paul, Elena Agudio, Elín Hansdóttir, Fernando Lloveras, Fia Palmgren, Fotini Lazaridou Hazigoga, Frederik Tygstrup, Gunilla Lundahl, Howard Eiland, Jan Bovelet, Jonatan Habib Enqvist, Jörg Koopmann, Jorge González, Juan Herreros, Leah Whitman-Salkin, Lene Harbo, Lorenzo Sandoval, Los Gemelos Suárez, María Benedetti, Mari-na Reyes, Mark Jarzombek, Michy Marxuch, Miodrag Kuc, Munta-das, Patricia Almeida, Patrick Kochlik, Patrizia Bach, Rasmus Sorinus Jensen, Reyes Santiago Rojas, Rick Buckley, Sami Khatib, Sofia Nyblom, Suza Husse, Taru Elfving, and Werner Oechselin.

Also, to colleagues Callum Harper and Ectoplasmic Materialism who were so supportive during the doctoral process… the participants of the ‘Spectre and the Metaphor’ conferences Esther Peeren, Annie Lowe, and Vera Knútsdóttir… the participants of Memory #01 Greta Eacott, Eliel Lazo, Janosh Schneider, David Bravo Nogués… the participating of Memory #05 Alexander Höglund, Dance for Plants, Ectoplasmic Materialism, Felix Becker w/Sisters Hope of Sensuous Society, Freja Dahl Kofoed + Martha Skytte + Randi Kjær, Ida Bergman, Lisbeth Skytte and the Gammelgaard ceramics group, Sebastian Gatz, Richard Krantz,

To the people of Sweden for supporting the Art Technology Design Programme (KTD). To the leadership of Katja Grillner, Magnus Bärtås, Meike Schalk, Magnus Mörck, and Mathew Gregory who created and nurtured this worthy cooperation between Konstfack and KTH, and in so doing have offered us, the candidates, extraordinary circumstances to work with excellent people, resources, time, and space. It has been a privilege to be part of the initial class of the KTD programme along with dear colleagues Adam Bergholm, Maja Frögård, Anna Holmquist, Behzad Khosravi, and Anna Lundh.

…and no less to my supervisors, Profs. Leif Dahlberg and Håkan Nilsson, for taking me on board, for their guidance and support.

To the jurors Profs. Marcia Cavalcante, Sabine Höhler, Nina Möntmann, Ulrich Schurr, to opponent Dr. Bonaventure Soh Bejeng Ndikung, as well as to readers Prof. Katja Grillner at KTH, and Prof. Martín Ávila at Konstfack – my utmost gratitude for the time and patience.

And, I am most grateful to Florian Dombois, who has been supporting me from the very beginning, ‘through the greenhouse’; and to Maria Lantz, who has been a power of example as artist, teacher, and advocate for the arts.

Without you I would never have been able to maintain rhythm. I once more express my sincerest gratitude.
Luis Berrios-Negrón (San Juan, Puerto Rico, 1971*).


ten. I explore the perceptions, enactments, and displays of environmental form. I often call these practise-based research works *social pedestals*. Some recent exhibitions include Impasse Finesse Neverness at the Museum of Archaeology of Bahia in Brazil (2017), Collapsed Greenhouse at Undisciplinary Learning in District-Berlin (2016), and Earthscore Specularium at Experiment Stockholm in Färgfabriken (2015). I previously was commissioned artist at the 3rd Biennial of Art of Bahia (2014), represented Germany in the 10th São Paulo Biennial for Architecture (2013), was core-collaborator with Paul Ryan in the Threeing project at *Documenta13*, and exhibited in Ute Meta Bauer’s Future Archive at the Neuer Berliner Kunstverein (2012). I served as Assistant Professor at the Technische Universität de Braunschweig (2011-2013), Visiting Professor at the Fachhochschule Münster (2013-14), and Tutor of fine arts and of furniture design at Konstfack (2015-2017). I founded the Anxious Prop art collective, the Paramodular environmental design group, the Transhemispheric Residency Programme, and I am associate member of the M.I.T. Council for the Arts. I have a bachelor of fine arts from Parsons New School, a master of architecture from M.I.T., and PhD in technology from the Art Technology Design joint programme by Konstfack & Royal Institute of Technology KTH (SE 2015-20).
by Luis Berrios-Negrón
PhD dissertation for the degree of Doctor of Technology.

opponent: Dr. Bonaventure Soh Bejeng Ndikung
jury: Profs. Martín Ávila, Marcia Cavalcante, Sabine Höhler,
Nina Möntmann, and Ulrich Schurr; Prof. Meike Schalk, chair.
readers: Profs. Katja Grillner at KTH, and Martín Ávila at Konstfack.
supervisors: Profs. Leif Dahlberg, Håkan Nilsson, Florian Dombois (ext.)

Printed in Berlin, Germany by Europrint.
Paper Plano Pak / Typeset Perpetua and Georgia.
With technical support from Calle Krantz,
and editorial support from Ronah Sadan.

Published by Konstfack Collection.

This doctoral work has been made possible by the Konst Teknik Design / Art Technology Design doctoral programme between the Royal Institute of Technology (KTH) and Konstfack University of Arts, Crafts and Design of Sweden. The publication has also been funded by the Research Focus in Transdisciplinarity Programme of the Zürcher Hochschule der Künste (ZHdK).

Cover & Frontispiece follow the two-volume box/book design of the Surhkamp edition of Das Passagen-Werk by Walter Benjamin. The topological figure or kleinform illustration is drawn from the Relational Circuit by Paul Ryan.


Berrios-Negrón, Luis.
Breathtaking Greenhouse Parastructures: A supplement to The Arcades Project from a Caribbean perspective [and a call to a careful practice of epistemológica]. Includes bibliographic references and index.

ISBN 978-91-7873-592-1
TRITA-ABE-DLT-2020

[Keywords] 1. greenhouse, 2. colonial memory, 3. phenomenotechnologies, 4. global warming, 5. sculpture, 6. installation art.
Abstrakt (SV)
Breathtaking Greenhouse Parastructures: a supplement to the Arcades Project from a Caribbean Perspective [and a call for a careful practice of epistemológica]