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**Tearing and forming
a conceptual history of clouds**

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Tearing and Forming
A Conceptual History of Clouds

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Dedicated to my dad

Abstract

This thesis thinks deeply about what clouds mean to us, first through the identification of a paradigmatic ‘cloud concept’ that is brought into play by economists and engineers of the cloud computing industries, before moving to identify the historical interlocutors of this cloud concept within art, literature, poetry, theory and theatre and performance. The cloud computing industries are contributors to greenhouse gases, responsible for at least 2% of carbon emissions. The service-oriented architecture of these industries, which allows “users” to deposit data in remote databanks and access this data from mobile devices in disparate locations, depends on outsourcing labour through biocapital arrangements that generate vital energy from displaced migrant workforces in the US and dislocated populations in the global South. Digital capitalism abstracts economic flexibility from a disposable workforce that live in a secured state of precarity. This thesis takes the cloud computing industries as an emblematic sociotechnology, through which global populations are mediated into these economic relations.

This thesis has henceforth sought to interrogate how a system of exploitation could be sustained behind the icon of a cloud. According with this central aim, this thesis unfolds upon an interrogation of the deep conceptual history of the cloud concept, written against the notion of a ‘total history,’ following Michel Foucault’s ‘general history’ in *The Archaeology of Knowledge* (1969) or Friedrich Nietzsche’s ‘genealogy’ in *On the Genealogy of Morality* (1887). That is, I visit disparate phenomena and

disciplines in the history of ideas, seeking disruptive moments that can displace the contemporary valorisation of clouds as environmental forms. The decentring move that is driving this historical method puts my work in dialogue with Kalindi Vora, *Life Support: Biocapital and the New History of Outsourced Labor* (2015), Silvia Federici, *Caliban and the Witch: Women, the Body and Primitive Accumulation* (2004) and Joan Martinez-Alier, *The Environmentalism of the Poor: A Study of Environmental Conflicts and Valuation* (2002). These writers have narrated the discontinuous history of environmental values by way of mapping those values through the appalling co-ordinates of global structures of biocapital. My work similarly decentres our conceptual frameworks for thinking about clouds, by locating historical moments where ideas about them seem to stem not from deep meditation “on” or “about” the “truth” of the “ecology,” but from gendered and racialised operations of social ostracism, modes of biocapital abstraction, and the dialectics of bestiality and sacralisation, primitivism and value-conferral, to recapitulate the economic relations of gendered and racial capitalism. Therefore, I attempt to deconstruct the cloud concept as an environmental value claiming to be the summation of a long history of “humans” relating to the skies, where in actual fact it services a global model of capital accumulation by dispossession. Overall, the thesis hopes to displace its readers’ way of looking at the skies via dispersing static concepts about clouds. The thesis seeks to rescind the conceptual assumptions through which we perceive clouds as tearing and forming. Through these unremarked conceptual assumptions clouds lend to biocapital

patterns of life, an image of ecological orchestration. Dissolving this illusion of ecological orchestration is the central aim of this thesis.

TEARING AND FORMING
A CONCEPTUAL HISTORY OF CLOUDS

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Preface to Style and Structure

Every act of writing begins with a reader. A thought-figure at their origin, this reader tells the writer how to become who they are in their writing; this reader shapes, shades and silhouettes the linguistic being of things. It is in this sense that a reader alters, forms and deforms processes of linguistic formation, thereby disclosing the reader as, to echo Walter Benjamin, the ‘foundation of every insight into questions of style’.¹ In this same fragment, Benjamin confirms the way readers legislate a writer’s actions:

A good writer—and here we must be careful if we wish to arrive at any real insight—is a writer who does not say more than he thinks. This definition will probably be read as a request for “clear and simple writing”; people will imagine that a good writer is one who says exactly what he thinks. But it is this obvious inference that must be avoided at all costs. The foundation of every insight into questions of style is the realization that there is no such thing as “saying what you think.”²

Benjamin describes the relational quality of writing, as if hung or threaded between imagined-reader and, so far as they have not yet begun writing, imagined-writer. Throughout their joint manifestation, their coming into being, there is no communication in what happens under the writer’s hand. There is only the commencement of language forming in the thought-figure

¹ Walter Benjamin, ‘May—June 1931’, *Selected Writings*, vol. 2, 1927–1934, trans. by Rodney Livingstone and Others, ed. by Howard Eiland,
² Benjamin, ‘May—June 1931’, pp.471–72.

of the reader, this shape that induces every potential linguistic movement, as a mark upon a page.

Benjamin brings clarity to the act of writing, divulging the futility of any effort to say what one thinks as a writer. Alternately, he propounds that a writer should imagine the reader with whom she does not want to speak. This person exists on the peripheries of her thoughts but they belong at the centre of any act of writing. There is just no “telling” this reader – there is simply no such thing as “saying what you think” to this reader – and as such, this reader makes the act of speaking truly worthwhile, clarifying the thoughts that we possess through forcing, as the foundation and the focus of each linguistic means, each act of writing.

How can I place this reader centrefold in the following work? This preface addresses questions of style, before the commencement of the thesis. I worry that a resistant or reluctant reader might misinterpret the “conceptual history”, and believe this work to offer a new conceptualisation of history as a given medium in which we can find examples of clouds. Further, I worry this work will be erroneously read as if adopting an archival register, as if collating materials “about” or “on” clouds through the apparent coherence of chronology or time. These are very real concerns that cut to the centre of the critical outlay of the following work. As will be seen, the project is about deconstructing the way that time is compressed into clouds as ecological objects, as already existing within and communicated through an archival register. Clouds as concepts are arrangements of history, in so far as they are collations of text, painting, image, philosophy and cultural phenomena. Dealing with the “conceptual history” of clouds hence

means negotiating the way that concept is fabricated, in order to disturb or perturb any apparent cohesion of that fabrication. Written against the coherence of collective meaning the *conceptual history* follows Michel Foucault's *general history* in his revision of Friedrich Nietzsche's *genealogy*, driving toward discontinuity, decentring and dispersion.³ In the context of ecological concepts, I have brought this mode of attention to bear on clouds as objects with collective meaning, whilst attending to a continuum of expropriation and dispossession.

In thinking about this continuum of expropriation and dispossession, I have been gripped by one particular passage where Karl Marx describes 'So-Called Primitive Accumulation', in the final section of Volume One (1867) of *Capital*:

In themselves money and commodities are no more capital than are the means of production and of subsistence. They want transforming into capital. But this transformation itself can only take place under certain circumstances that centre in this, viz., that two very different kinds of commodity-possession must come face to face and into contact; on the one hand, the owners of money, means of production, means of subsistence, who are eager to increase the sum of values they possess, by buying other people's labour power; on the other hand, free labourers, the sellers of their own labour power, and therefore the sellers of labour. Free labourers, in the double sense that neither they themselves form part and parcel of the

³ Michel Foucault, *The Archaeology of Knowledge and Discourse on Language*, trans. by A.M. Sheridan Smith (New York: Pantheon Books, 1972). Cf. Friedrich Nietzsche, *On the Genealogy of Morality*, trans. by Carol Diethe, ed. by Keith Ansell-Pearson, Cambridge Texts in the History of Political Thought, ed. by Raymond Geuss and Quentin Skinner (Cambridge: Cambridge University Press, 2010).

means of production, as in the case of slaves, bondsmen, &c., nor do the means of production belong to them, as in the case of peasant-proprietors; they are, therefore, free from, unencumbered by, any means of production of their own.

[...]

The capitalist system presupposes the complete separation of the labourers from all property in the means by which they can realize their labour. As soon as capitalist production is once on its own legs, it not only maintains this separation, but reproduces it on a continually extending scale.⁴

Marx describes a process of primitive accumulation that is foundational to capital. However, it is vital to resist the overly historicist reading that might thus position slavery as an outmoded labour regime, or to think of land appropriation as a historical stage that pre-dates an antecedent narrative of globalisation.⁵ As Nikhil Pal Singh underscores, what Marx calls primitive accumulation aligns with what he elsewhere calls the ‘premature death’ of ‘veiled slavery,’ meaning that in every procedure of capital life is seized into what Orlando Patterson termed the ‘social death’ of the dispossessed.⁶ In each phase of globalisation, the ‘most violent aspects of primitive accumulation’, as Silvia Federici writes, including the ‘continuous expulsion of farmers from the land, war and plunder on a world scale, and

⁴ Karl Marx, ‘So-Called Primitive Accumulation’, *Capital*, vol. 1, trans. by Samuel Moore and Edward Aveling, ed. by Frederick Engels (London: Lawrence and Wishart, 1974), pp.507–549, p.507.

⁵ Nikhil Pal Singh, ‘On Race, Violence and So-Called Primitive Accumulation’, *Social Text* 128, 34.3 (2016) 27–50.

⁶ Singh, ‘On Race, Violence and So-Called Primitive Accumulation’ (p.29). Cf. Marx, *Capital*, vol. 1, p.381 (pt.3, ch.10); p.925 (pt.8, ch.31). Orlando Patterson, *Slavery and Social Death: A Comparative Study* (Cambridge, Mass.: Harvard University Press, 1982).

the degradation of women' continue to serve as *necessary conditions* for the existence of capital.⁷ Without transforming bodies into disposable units of energy and thereby dispossessing those bodies of any right they have over their land and their life, capital would be inoperable as relations of production.

My work is invested in critically interrogating the environment as a medium for this power of capital to disfigure bodies and abstract populations from their land. I have wanted to understand the way that a discontinuous history of clouds might fit into the continually extending scale of separation and dispossession. I have wanted to understand the way that an ecological concept could serve to separate people from land, from the construct of “the human,” and from the civil liberties and legislative rights that ecological embeddedness and humanity bring.

On these grounds, the mode of attention that this work embodies is one of tentative advance and retreat. In the introduction, I diagnose a paradigmatic cloud concept at work in the present, particularly identifiable in the visual metaphors that proliferate around “cloud computing”. Through the chapters, I will advance through materials that appear to confirm or substantiate the way that clouds are being conceived paradigmatically in the present. Doing so brings depth to the ideas that circulate in the computing industries and which, as I argue, extend into the arts, media studies, and to such organisations as the Cloud Appreciation Society. The structure of the chapters could be mistaken as operating on the language developed for

⁷ Silvia Federici, ‘Introduction’, *Caliban and the Witch: Women, The Body and Primitive Accumulation* (Brooklyn, NY: Autonomedia, 2004), pp.11–20, p.13.

clouds through the computing industries, as if these chapters historicise the ideas grounding that phenomenon. Instead, this work aims to ask why we possess the epistemic frameworks for clouds that are brought into play by the visual metaphors of the computing industries, and to what end these metaphors or symbols circulate. As a mode of attention that modulates between ontology and symbol, this has involved contemplation, appreciation and critical self-reflection.

Appreciating the cloud concept has brought me to reflect upon how normalised it has become to contemplate clouds as fanciful, unstable, non-objects, in which shapes or “things” can be identified. The idea of a “little white fluffy cloud” suggests a cartoon-like emblem of day-dreaming, and looking at and thinking about clouds feels like an act poised between this playful mode of attention and a more serious appreciation of the sublimity of nature—its ability to produce “beautiful” and “infinite” forms. Looking up at clouds, one feels oneself becoming aware that these forms vary infinitely but repeat, globally and temporally, that clouds have “always been” in the sky above “humans”. This gives way to a sense of connectedness—as if looking at clouds is sharing in something “fundamental” or “ancestral”.

Putting a critical frame around this mode of attention meant questioning the conception of clouds as human, infinite and drifting concepts. This became a constant balancing act between seeing the concept as it first appeared, and appreciating what I brought to it as a researcher and writer engaged in this thesis, in order to understand its architecture and

design. The mode of writing was intended to engage my reader in the same, subtle balance of attention.

Underpinned by this mode of attention, the forthcoming work has been haunted by stylistic questions. I have been absorbed by the question of how best to communicate the knot of reality and imagination, when thinking about the concepts, metaphors and symbols that extend in and beyond an industry such as cloud computing. How can I stand my reader beside me and hold between us a cloud (a concept) through which we can both perceive the forces that architect that concept as “natural” form?

I want to align this mode of attention to Critical Thought and Literary Studies. As Jonathan Culler states, the writing of criticism matters because it places demands of otherness on thought.⁸ In keeping with that thought, the performance of critical writing is never secondary to the practice of research. Writing produces a discipline and all of its particular modes of operating, inasmuch as institutional entities like universities, architectural places like buildings, and systematic segmentarities like departments, institutes and research divisions, produce allegiances, spheres of understanding, and fidelity to fields. In literary studies, we cannot help but begin our acts of writing as questions of style, and we cannot help but begin stylistic questions with queries regarding language: What words belong in this piece of writing? What is the discourse of my intellectual forbearers and my institutional colleagues? Where are those insistent and indispensable areas of my thinking that extend beyond this discourse? The

⁸ Jonathan Culler, ‘The Literary in Theory’, *What’s Left of Theory?*, ed. by Judith Butler, John Guillory, and Kendall Thomas (London: Routledge, 2000), pp.273–92, p.988.

literary critic is devoted to such auto-interrogative questions about language. Every literary study thus happens in and about language. Every word claimed by literary studies is so because it critically regards the discourse it is given to work within.

In this conception of literary studies, I recollect the language-philosophical dialectical project of critical theory, and do so in order to align literary studies with the theorists of the Frankfurt School. This Institute for Social Research pioneered the dialectical critique of the objects and customs of mass culture, holding all social and aesthetic practice under the light of Marxist-Leninist theories (theories that they also held with critical regard). These thinkers challenged systems of thinking by producing radically divergent and unconventional objects of criticism, using swerving sentences exhibiting the uncanny employment of syntax – placing words in weird arrangements that confront their readers with an unfamiliar literary textual surface.

The Frankfurt School thus transformed the page-plane into a site for performance, where they might stage their radically divergent ideas in language.⁹ Walter Benjamin, in his oft-quoted essay, ‘The Work of Art in the Age of Mechanical Reproduction’, simultaneously exposes and reassesses the effects of mass culture, discovering the radical political reserves of art’s objecthood in the mechanical reproducibility of cultural objects. For Benjamin, the objects of art parasitically draw their worth from

⁹ For the page as a site of performance, see Ric Allsopp and Kevin Mount (eds), *Performance Research*, 9.2, Special Issue: On The Page (2004).

a ritualistic system that values authenticity.¹⁰ Contrary to this, reproducible art objects do not need to be seen as authentic in order to be seen as art objects. These objects thus possess the political efficacy to resist cultural systems typically conferring value on art.

It is my contention that we cannot appreciate this ability to rethink the political efficacy of artistic objects, and that indeed, we will entirely miss Benjamin's ability to review Marxism-Leninism with this thinking, unless we simultaneously appreciate his thoughts on 'linguistic being', as described in his essay 'On Language as Such and on the Language of Man'.¹¹ In this essay, Benjamin privileges language as a shared medium of animate and inanimate nature. By implication, language no longer serves as an instrument of human communication, but exists as the constitutive medium in which humans and things together partake.

These thoughts about language are indissolubly tied to Benjamin's thoughts about art objects. The immediacy of language allows things to partake in the linguistic constitution of reality, insofar as language-things overthrow the privileged position of the speaking human subject. Admitted into the material realm of objects, with no need for the act of writing or speaking, language *itself* comes to resist any ostensible 'subject' / 'object' divide upholding the privileging of human communication. In its

¹⁰ Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', *Illuminations: Essays and Reflections*, ed. by Hannah Arendt (New York: Schocken Books, 1969), pp.217–252.

¹¹, Walter Benjamin, 'On Language as Such and on the Language of Man', *Selected Writings*, vol. 1, 1913-1926, ed. by Marcus Bullock and Michael W. Jennings (London: The Belknap Press of Harvard University Press, 1996), pp.62–74, p.63. In thinking about this essay from Benjamin, I remain cognisant of Hito Steyerl, 'The Language of Things', *Transversal 06/06: Under Translation*, an imprint of the *European Institute for Progressive Cultural Politics* (2006).

materiality, language ceases to partake in objectivity. Language rather achieves what Jon Erickson would term, ‘*objecthood*’ that by resisting reduction to easily consumed sign value gives rise to a process of unfolding meaning through the act of contemplation’.¹² To echo the closing words of ‘The Work of Art’, for the first time in world history, language emancipates things from their parasitical dependence on communication. From a ‘thing’ one can fashion any number of words; to ask for the ‘authentic’ word makes no sense. But the instant the criterion of authenticity ceases to be applicable to communication the total function of language is reversed. Instead of being based on truth, clarity and correspondence, it begins to be based on another practice – politics.¹³

Much as concepts are the political medium of critical argumentation in the forthcoming work, language was, for the Frankfurt School, the political medium of critique. Contemplating language in its present is a political act, because language unfolds into a privileged history through that act of contemplation. This is why language was so important to the Frankfurt School, not as an object of study, but as a medium of work. In the hands of Benjamin, the labour of writing is an act of contemplating language, of critically enquiring: What is and isn’t included in the language of the *polis*? The works of Theodor Adorno are likewise inflected by this question of how style can rupture the given medium of thought. Inevitably, there is a kind of self-questioning insomnia to this mode of thinking: an

¹² Jon Erickson, ‘The Fate of the Object in the Modern World’, *The Fate of the Object: From Modern Object to Postmodern Sign in Performance, Art and Poetry* (Ann Arbor: The University of Michigan Press, 1995), pp.1–45, pp.31–2.

¹³ Benjamin, ‘The Work of Art’, p.252.

inability to rest for the need to challenge what Judith Butler terms ‘tacit presumptions’, unrelentingly working to overhaul these, to ‘provoke new ways of looking at a familiar world’.¹⁴ Butler here echoes Adorno, whose *Minima Moralia* constantly aphoristically surges toward yet resists defining the insurmountable task of critical theory. It is paradoxical: ‘our perspective of life has passed into an ideology which conceals the fact that there is life no longer’.¹⁵ It is enigmatic: ‘perspectives must be fashioned that displace and estrange the world’.¹⁶ Its truths approach contradiction: ‘only at a remove from life can the mental life exist’.¹⁷

These procedures indicate just how incredibly static Benjamin and Adorno are capable of making language, even when it is on the move. In Benjamin’s hands, language does not have a function: it is going nowhere, producing nothing. Yet from here Benjamin allows the reality of things to proliferate through our linguistic contemplation of their being. In Adorno’s hands, the function of language is to swerve from and displace the common sense understanding, in order to realise the indispensable veracity of their being beyond our thoughts. Our want to translate these writers attests to the lasting efficacy of these critical repudiations. We want to draw Adorno into the sensical, just as we want to seize upon the interrupted surface of Benjamin’s essays.

¹⁴ Judith Butler, ‘A ‘Bad Writer’ Bites Back’, *New York Times* (20 March 1999).

¹⁵ Theodor W. Adorno, ‘Dedication’, *Minima Moralia: Reflections on a Damaged Life*, trans. by E. F. N. Jephcott (London: Verso, 2005), pp.15–20, p.15.

¹⁶ Adorno, ‘Finale’, *Minima Moralia*, pp.247–9, p.247.

¹⁷ Adorno, ‘Keeping One’s Distance’, *Minima Moralia*, pp.126–27, p.126.

In this thesis, my concern for concepts bears an affinity to these writers and their beliefs, whilst I relate expansively to the concept of “language” and “style”, through the structure, field, discipline and design of this work. While the Frankfurt School were struck by a revelation of language, I have been equally struck by the way concepts constitute our lived reality. I am interested in contemplating this concept-being of the ecology. I want to bring those concepts into objecthood, so that they might resist reduction to ‘easily consumed sign value’, giving rise to a ‘process of unfolding meaning through the act of contemplation’.¹⁸

And so the stylistic question of this work is how to rupture or displace these environmental forms whilst leaving them intact so that we might learn through them. This stylistic question is not just about how to write the work and what lexical choices to make in its composition, but about how the entire project is composed, and the message of the structure and form of the work. In this, I am reminded of Gregory L. Ulmer’s essay ‘The Object of Post-Criticism’, where he questions whether the academic essay can stage an avant-garde collage/montage revolution in representation, injecting into the discourse of knowledge the ‘*anamorphosis*’ of the object of study.¹⁹ For Ulmer, it is Roland Barthes (1915–1980) who first proposes the anamorphic object of post-criticism by compacting poetry and criticism into one writing of style, in defence of his Racine book.²⁰ The Oxford English Dictionary defines *anamorphosis* as ‘a distorted projection or

¹⁸ Erickson, ‘The Fate of the Object in the Modern World’, pp.31–32.

¹⁹ Gregory L. Ulmer, ‘The Object of Post-Criticism’, *Postmodern Culture*, ed. by Hal Foster (London: Pluto Press, 1985), pp.83–110.

²⁰ Ulmer, ‘The Object of Post-Criticism’. Cf. Roland Barthes, *On Racine*, trans. by Richard Howard (New York: Octagonal Books, 1977).

drawing of anything, so made that when viewed from a particular point, or by reflection from a suitable mirror, it appears regular and properly proportioned; a deformation'.²¹ The anamorphic object has been deformed, and this deformation can only be undone by adopting a very particular perspective upon the object. I might add that this idea of deformation is itself perspectival. The regular and proper proportion of objects is itself a question of perspective. Rather, the object is differently formed from different positions. The incentive of post-criticism is move toward an interpretation of the object *as formed*, as most properly thought of as regulated or proportioned.

I hope by now to have made transparent that the content of this work is not the most important feature. Granted, the peculiarity of this project has afforded me the opportunity to visit and cross-reference some unexpected materials. I spent time in the Library of Congress with the rare documents from the Fluxus Happening "Zeevang", I worked with Tate archivists looking at Turner's sketchbooks and finance ledgers, and Constable's cloud studies. I also hunted down clouds in contemporary theory. Doing so, I was shocked by the amount of available material. I found multiple examples of theorists working with clouds from the 1960s onwards, complemented by contemporary writers in eco-criticism, or artists in eco-art working with clouds. And of course, cloud computing emerged simultaneous with when I was starting this project—a simultaneity that had to be seen as instrumental in my decision to take up this topic. The Cloud Appreciation Society was

²¹ "anamorphosis, n." *OED Online*. Oxford University Press, March 2017. [accessed 26 May 2017].

growing. The BBC wanted to make radio shows with me. My friends wanted to buy me cloud mugs and cloud t-shirts.

This produced a very conflicting experience, where I would attend a conference and tell people about my PhD and they would tell me how weird, unusual and interesting it was, whilst rarely would a day go by when I would not receive some kind of ephemera in the post from a friend or an article, photo or link relating to clouds on an email. I would look at all of this material and find the same ideas regurgitated again and again. The idea of clouds as fleeting, the idea of clouds as communal, shared forms. This experience made me sit back and look at my own project with a more critical eye, asking: why am I writing about clouds? Why is anyone writing about clouds? What has led us all to this topic? Why clouds?

I was reluctant to use the university as a setting in which to valorise the paradigm of clouds, without inflecting my work with a self-reflexive question of “Why clouds?” I was reluctant to lend institutional bearing to the emergence of clouds as paradigmatic concept. The question “what is your thesis about?”, which I continuously encountered during this doctoral project, shortly followed by the response “clouds? That’s so interesting and unusual”, seemed to me poised to perform this unwanted function of institutional valorisation. This question of content is a locutionary act performed by the inquisitor, with an illocutionary intent of ascertaining the object of the respondent’s studies, and a perlocutionary force that works to

proliferate an ideology of objectivity.²² On this matter, Jacques Derrida writes:

what [a pedagogical institution] cannot bear, is for anyone to tamper with language[...] It can bear more readily the most apparently revolutionary ideological sorts of ‘content,’ if only that content does not touch the borders of language and of all the juridico-political contracts that it guarantees.²³

To treat the content as if independent from the style of a work seeks to confer the value of objectivity on the labour of writing. This proposition contractually binds the writer to the ideology of objectivity. This ideology of objectivity restricts the discourse of knowledge from approaching the anamorphosis of objects. It proffers that we share in thought an object of clear dimensions: points, angles and sides, paused in space and time, advancing through critique, devoid of any linguistic realities. For Derrida, the binary that subordinates style to content sustains the university as institutional form through the continuity of objects of study that do not disrupt norms of understanding.

A reflection such as Derrida’s made this preface appear necessary, as I obviously needed to make clear from the outset whether or not this work “tampers” with the institutional code set out for a doctoral thesis. In

²² J. L. Austin, *How to Do Things with Words*, 2nd edn, ed. by J.O. Urmson and Marina Sbisa (Oxford: Oxford University Press, 2011).

²³ Jacques Derrida, ‘Living On/Borderlines’, trans. by James Hulbert, in Harold Bloom, Paul de Man, Jacques Derrida, Geoffrey H. Hartman, J. Hillis Miller, *Deconstruction and Criticism* (London: Routledge & Kegan Paul, 1979), pp.75–176, p.94 [n].

contemplating clouds as concepts, I draw from science, literature, theatre and performance, art, history and philosophy. How I move through these materials varies from case to case, even to the extent that I move into and out of the language of these fields. This may perturb or even upset scholars who feel a doctoral thesis works within a given field and template to allow a given form of depth on a particular topic. I would contest that this work follows the concept it seeks to examine, and that that concept has its own depths, as much historical as conceptual. Following this concept meant reconfiguring some of the established procedures in place in universities, prescribing the form in which a doctoral thesis should appear. That is, writing this work was a balance between attending to the specificities of materials and the schools of thought around them, and pursuing, analysing and overhauling a concept. This might at times mean overlooking certain paradigms or normative codes of reading in place in the different fields that I touch upon, and I do so in order to be able to stage a continuous and rigorous critique of the question at hand.

In the main, I wanted to avoid “building” a pre-established concept of clouds by drawing from different fields in order to valorise that concept. This would be to value a system whereby my object of study became a fetishistic object of pre-determined ways of knowing. The university can perform as a space for overhauling these determined ways of knowing, not lending them institutional weight. The university can be where we ask questions of style. Without asking these questions of style, we are left looking toward a semblance of the things we are studying. The more we ask of content, the less we regard the things about which we write. The object of

such labour is of perfect theoretical dimensions. It is an object of ideal objectivity, as it does not exist beyond our programmed means, imploring us to institutionally dispose this writing one way or another.

I should be equally transparent about the critical genealogy of this thesis and the lines of thought to which the work is committed. This amounts to how I use the word “capital”. I use “capital” to imply an operation of accumulation by dispossession, originally outlined by Marx and since built upon by the likes of Harvey, Tadiar, Federici and Vora. Accumulation by dispossession is a centralised concept of capital that allows for speaking about economic relations of production of both local and global dimensions. These structures, posit complex concatenations of human and nonhumans that optimise the potential for surplus value generation. Where possible I have used sociological research that exposes the relations of production driving the acceleration of the cloud computing industries to bring historical specificity to this centralised concept of “capital”, which otherwise appears as an abstract argument about the mechanisation and command of the environment and the social into a machine for producing and re-producing wealth. This centralised concept of capital has the pitfall of appearing abstract at times, as if straying into Derrida’s criticism of objectivity. I have attempted to utilise cloud computing to undermine any collectivised concept of “capital” at work in the broader conceptual scaffolding of this thesis. Yet at times a centralised concept of capital as accumulation by dispossession allowed me to analyse how capital works as a constitutive medium, as lived metaphor, taking effect not only in specific social arrangements and relations but also in

language, concept and idea. The introduction outlines in detail how the environment has been put to use as a conceptual domain servicing economic structures of relation. Ideas about the environment are used to optimise the potential for surplus value generation. In places, the complexity of this argument necessitated using capital as shorthand for those processes, with only limited space for discussing specific industrial relations. This style of writing was not intended to proceed toward objectivity or totality, but to allow the reader to function on a conceptual level in order to understand the role that concepts perform in relations of production, through questioning a generalised dynamic of accumulation by dispossession.

Considering the concern that this work shows for processes of abstraction, or ‘veiled’ labour, a preface is also an appropriate place to step out of the work to speak about, ironically, the work. As a printed and bound object, the production of this thesis used paper, ink, plants, dyes, chemicals and minerals, to name but a few material dimensions, and the production and the transportation of these materials no doubt involved outsourced factory labour employment. Though I have attempted to avoid using cloud computing, that industry has no doubt played host to some aspects of this work—in drafts stored remotely in email inboxes; through digitised archives searched and used online; or even in social media posts about the process of my work. Ultimately, the digital and bound thesis are both testament to the extent to which I have been produced as human through my complicity in dehumanising relations of production, even as I remain critical of these relations.

I intend to close this preface with the narrative of my productive labour, as the writer who produced this work. No doubt this narrative is not exhaustive but merely representative. I wrote my first project involving clouds in 2011, when I tried to use cloud nucleation processes to analyse the opening speech of Prospero in *The Tempest*. The application was one-directional, but this project ignited my excitement for the topic. I revisited clouds the following year, during my Masters studies. I started to gather materials on clouds – cloud books, cloud t-shirts, cloud mugs, cloud artworks, cloud essays, cloud photography – until, reaching a tipping point, an amusing collection of ephemera became symbolic of the paradigmatic function of clouds in the present. As far as the following period of my doctorate is concerned, there are many life events sitting in the wings of 2014-2018, the least avoidable and the most unthinkable being the loss of my dad in a cycling accident in August 2016. It is difficult to remember the exact process of writing the thesis before this landmark of loss, around which my existence as a writer cannot help but pivot, and which greatly shapes the landscape of memories available to me. My doctorate was not fully funded by a research council. This means that I was not paid to do this work, and though I covered fees through grants and bursaries from charities and trusts, and supported myself through tutoring, both privately and in universities, my parents supported me financially at many points along the way. I remember that I wrote the majority of this thesis in the British Library, in the Rare Books and Music Reading Room. I owe thanks to the staff of the British Library, especially the library assistants and those working in the café, foyer and other public and private areas of the building.

I should also extend immense gratitude to the British Library security staff for their caring nature. I would cycle to the library on my vintage Falcon bicycle, silver with a rainbow sticker around the frame, and chain it up outside. I queued to get in and was asked to leave at the end of the day – working long hours, like many doctoral students. I wrote the thesis on an 11-inch MacBook Air, which I have owned since 2011. It was designed by Apple in California and assembled in China (likely the Suzhou Manufacturing Facility). Regarding the citations of Damisch in Chapter Three, I worked with librarians and staff of the Maughan Library, to arrange complex inter-library loans from libraries in France. Regarding other rare sources, I worked with librarians and staff of the Library of Congress, Senate House Library, Leeds University Library, Oxford Bodleian, and the archivists in the Tate Prints and Drawings Room, whose expertise I drew upon in repeated visits to the Tate Britain archives.

Beyond the page, the writing process of this thesis happened in conversations. Kéline Gotman taught me how to read with care, encouraged me to pursue writing as a practice, and gave me valued friendship, Seb Franklin gave me direction and friendship of equal merit, John Thornes bought me cups of tea and taught me about meteorology, members of the faculty of the English Department and the Comparative Literature Department at King's College London let me learn from their approach to their work, the administrative staff in the Literatures Office at King's helped to organise me, in every aspect of my enrolment and employment, the cleaners and security staff of the Strand Campus, Virginia Woolf Building and Maughan Library made the work possible and enjoyable, the Compass

staff enrolled me and dealt with my interruption, our student and postgraduate representatives presented my views to the college, my students in the departments of English, Culture, Media and Creative Industries, and Comparative Literature let me join their learning curves, Claire Malaika-Tunnacliffe and Max-Louis Raugel helped with my French translation, Aliko Kylika sat next to me while I read Aristotle, Katrina sat next to me through everything, Ella designed projects with me, Janhavi discussed Sanskrit and environmental politics, Bryony S. told me to keep going, Bryony W. bought me my first book on clouds in 2012 (Richard Hamblyn's *The Cloud Book: How to Understand the Skies* (2008)), Phil collaborated with me, the Lake District became my home, Seamus understood, Kayleigh and Ben climbed across mountains and up rock faces, my uncle Matthew read and read and read, my mum took up watercolour painting, Richard made breakfast, Kathryn and Rory brought Amber and James, and dad, I'm so sad and so grateful.

Introduction

This thesis thinks deeply about what clouds mean to us, first through the identification of a paradigmatic ‘cloud concept’ that is brought into play by economists and engineers of the cloud computing industries, before moving to identify the historical interlocutors of this cloud concept within art, literature, poetry, theory and theatre and performance. The cloud computing industries are contributors to greenhouse gases, responsible for at least 2% of carbon emissions. The service-oriented architecture of these industries, which allow “users” to deposit data in remote databanks and to access this data from mobile devices in disparate locations, depends on outsourcing labour through biocapital arrangements generating vital energy from displaced migrant workforces in the US and dislocated populations in the global South. Digital capitalism abstracts economic flexibility from a disposable workforce that live in a secured state of precarity. This thesis takes the cloud computing industries as an emblematic sociotechnology through which global populations are mediated into these economic relations.

This thesis has henceforth sought to interrogate how a system of exploitation could be sustained behind the icon of a cloud. According with this central aim, the thesis unfolds upon interrogating the deep conceptual history of the cloud concept, written against the notion of a ‘total history,’ following Michel Foucault’s ‘general history’ in *The Archaeology of Knowledge* (1969) or Friedrich Nietzsche’s ‘genealogy’ in *On the Genealogy of Morality* (1887). That is, I visit disparate phenomena and

disciplines in the history of ideas seeking disruptive moments that can displace the contemporary valorisation of clouds as environmental forms. The decentring move that is driving this historical method puts my work in dialogue with Kalindi Vora, *Life Support: Biocapital and the New History of Outsourced Labor* (2015), Silvia Federici, *Caliban and the Witch: Women, the Body and Primitive Accumulation* (2004) and Joan Martinez-Alier, *The Environmentalism of the Poor: A Study of Environmental Conflicts and Valuation* (2002). These writers have narrated the discontinuous history of environmental values by way of mapping those values through the appalling co-ordinates of global structures of biocapital. My work similarly decentres our conceptual frameworks for thinking about clouds, by locating historical moments where ideas about clouds seem to stem not from deep meditation “on” or “about” the “truth” of the “ecology,” but from gendered and racialised operations of social ostracism, modes of biocapital abstraction, and the dialectics of bestiality and sacralisation, primitivism and value-conferral that recapitulate the economic relations of gendered and racial capitalism. Therefore, I attempt to deconstruct the cloud concept as an environmental value claiming to be the summation of a long history of “humans” relating to the skies but that in actual fact services a global model of capital accumulation by dispossession.

My argument about the cloud concept divides it into three registers: clouds are concepts of “gathering” or communalism, clouds are “signifiers” or modes of conveyance, and clouds are forms of “flexibility.” “Gathering” carries connotations of exclusion and dispossession. “Signification” involves two joint mechanisms of abstraction and naturalisation. Finally,

“flexibility” implies the ability to be overworked without breaking, or the capacity to work laterally, amorphously, in a state of constant precarity. Each chapter interrogates one of these registers of the cloud concept. “Gathering” goes back through history to Ancient Greece, extending from cloud computing industry handbooks to the Festival of Dionysus, as theorised in the work of Aristotle. This chapter is about displacing the collectivity that clouds denote. Secondly, “signification” can be traced to various sources that input clouds into a machinic logic. The second chapter seeks to interrogate the way the cloud concept works—how an ecological form can come to denote socioeconomic structures. Finally, clouds are perceived as objectively elastic forms, as if their ecological reality is to morph with unrivalled flexibility. The final chapter maps this belief that clouds are elastic onto primitivist constructs, exploring the deeply troubling historical associations of flexibility and androcentric, Eurocentric structures of thought. Overall, the thesis hopes to displace its readers’ way of looking at the skies via dispersing static concepts about clouds. The thesis seeks to rescind the conceptual assumptions through which we perceive clouds as tearing and forming. Through these unremarked conceptual assumptions clouds lend to biocapital patterns of life an image of ecological orchestration, and dissolving this illusion of ecological orchestration is the central aim of this thesis.

The introduction to this thesis will perform three roles. In part one, I want to build on some of the thinking in the preface, setting up the stakes of a conceptual history of environmental form. Here I will outline my thoughts on the ecology of concepts. This ecology of concepts is the conceptual

composition of the ecology under the logic of capital, within which I would claim that clouds have been afforded a privileged status. In part two of the introduction, I will narrate that privileged status by looking across media, art and media studies, outlining the paradigmatic functionality of clouds. In this section, I will theorise the abstract functions of clouds, recognising that clouds are composed of ideas; concepts made up of notions of communalism, signification and elasticity. The thesis on the whole looks through the late twentieth century as an optic, through which to maintain these three areas of concern whilst exploring a diverse set of historical materials, focussing the deep conceptual history through its relation to the present. In the final section of the introduction, I want to outline how clouds were emerging into their position of privilege in the 1960s, so as to introduce the late-twentieth century optic that re-emerges within each chapter of the forthcoming work.

The Conceptual History of the Ecology

I will begin by fully situating environmental forms within the critique of language and concepts, which I touch upon in the preface to this work. Therefore, here I argue that any apparent coherence of “natural” form depends upon the primacy of concepts and the collective discourse of environmental thought. The consensus of authentic linguistic environmental forms and the complicit production of tacit presumptions about the environment will here be positioned as the historical process of valorization,

prioritization, ideality and reification, through which we can identify operations of power. The conceptual history is a mode of intervening into this process of valorization. Through the conceptual history, environmental forms can come into view *as formed* and *forming* concepts. The conceptual history hence re-frames the language-being and concept-being of the environment. As an act of writing, the conceptual history is a strategy of gathering together the subtle allusions and suggestive depths of an environmental form. The discontinuities of those suggestive depths can be used to stage a critical contradiction to the coherent “truth” of that form.

This method of thinking about the environment is in dialogue with writers for whom the representative qualities of the “ecology” can be contested. The Invisible Committee, in *The Coming Insurrection*, decry that ‘There is no “environmental catastrophe”. *The environment itself is the catastrophe*’, later expounding that ‘Ecology isn’t just the logic of total economy, it’s also the new morality of Capital’.²⁴ Or as Silvia Federici writes in an essay from 2010, ‘capital is learning about the virtues of the “common good.”’²⁵ For these writers, our concept of the ecology as “in crisis” is an abstract idea that does not extend from ecological forms but from the logic of economy. Climate crises, as Naomi Klein has suggested, present business opportunities, with corporations able to exploit climate

²⁴ The Invisible Committee, ‘The Environment is an Industrial Challenge’, *The Coming Insurrection*, Semiotext(e)/Intervention, Series 1 (London: MIT Press, 2009), pp.28–33, p.28–30.

²⁵ Silvia Federici, ‘Feminism and the Politics of the Common in an Era of Primitive Accumulation (2010)’, *Revolution at Point Zero: Housework, Reproduction and Feminist Struggle* (Brooklyn, NY: Common Notions, 2012), pp.138–148, p.140.

disasters in order to advance their objectives.²⁶ Federici has similarly analysed the way that:

Under the guise of biodiversity and conserving “global commons,” the [World] Bank has turned rain forests into ecological reserves, has expelled the populations that for centuries had drawn their sustenance from them, while making them available to people who do not need them but can pay for them²⁷

Federici asserts a nonsubjectified geopolitical dimension to the expansion of capital. This geopolitical dimension has more recently been echoed in the work of Neferti X. M. Tadiar, who argues that processes of primitive accumulation depend on ‘the territorial international order of sovereign nation-states established through European imperialism’.²⁸ That land is being appropriated under the guise of a capitalist “virtue” or “morality” of the “common (ecological) good” reconfigures the fact of environmental catastrophe as a conflict of concepts. The concept of catastrophe dominates environmental thought, but is recapitulated as an organising logic or as convenient moral ground upon which to re-produce the logic of capital.

To unpack this style of argument even further, Marx argues that capitalist production is multiply sustained through the disruption of what we would now call the ecology:

²⁶ Naomi Klein, ‘Introduction: One Way or Another, Everything Changes’, *This Changes Everything: Capitalism vs. The Climate* (London: Penguin Books, 2015), pp.1–30, p.8–9.

²⁷ Federici, ‘Feminism and the Politics of the Common in an Era of Primitive Accumulation (2010)’, p.140.

²⁸ Neferti X. M. Tadiar, ‘Life-Times of Disposability within Global Neoliberalism’, *Social Text 115*, 31.2 (Summer 2013), 19–48 (p.25).

Capitalist production[...] disturbs the circulation of matter between man and the soil[...] violates the conditions necessary to lasting fertility of the soil[...] But while upsetting the naturally grown conditions for the maintenance of that circulation of matter, it imperiously calls for its restoration as a system, as a regulating law of social production, and under a form appropriate to the full development of the human race.²⁹

This passage anticipates the working theorem of The Invisible Committee, and hence underlies the critical frame they place around environmentalist fears that the ecology is “in crisis,” opining that capitalist modes of production depend upon a concept of ecological catastrophe, so as to constantly call for the restoration of capital, as a system of order, regularity, law and ‘development’. For The Invisible Committee, a concept of the ecology makes capital seem necessary. The system of capital and the law of social production come to stand in for the failing system of ecological circulation.

I read this passage hand-in-hand with Marx’s theorem of ‘primitive accumulation’.³⁰ Primitive accumulation describes the process of abstracting surplus value from surplus populations. The notion of a ‘surplus’ population is produced, for Marx, through the ‘separation’ of workers from their land, their means of production and the materials of their labour.³¹ This leaves the worker ‘unencumbered’ by their ‘means of production’, meaning they are

²⁹ Marx, ‘Section 10: Modern Industry and Agriculture’, *Capital*, vol. 1, pp.329–357, pp.329–330.

³⁰ Marx, *Capital*, vol. 1, p.507.

³¹ Marx, *Capital*, vol. 1, p.507.

‘free’ not in the sense of being liberated but in the sense of being unmoored from any safe conditions of livelihood, health and security. These unmoored populations are rendered vulnerable so as to depend on wage relations for their safety. I read this passage hand-in-hand with Marx’s exegesis on the disturbed circulation of ‘matter’, ‘man’ and ‘soil,’ as outlined above because doing so begins to suggest that ecological concepts are acting in these processes of expropriation. In David Harvey’s working theorem of capital accumulation by dispossession, the circulation of ‘man’ and ‘soil’ is disturbed in order to dislocate populations allowing for the appropriation of both ‘soil’ and ‘man’ as a biocapital resource.³² The way that the world is configured into economic relations is inimitably bound to how the ecology is being conceived, who is thought to own it, and whose values preside over its future.

This implies that the forces of capital are constantly shaping how we perceive the “ecology,” producing the “ecology” as a sort of collection of inter-dependent ideas that best serve the ends of capital. This brings a conceptual dimension to the frequently materialist emphases of environmentalist economic critique.³³ Historically, the forces of industrial production that undergirded economic gain are critiqued for having brought about what we now term the “catastrophe” of global warming, through

³² David Harvey, *The New Imperialism* (Oxford: Oxford University Press, 2003); David Harvey, ‘Reading Marx’s Capital, volume 2,’ (26 January 2012), available online <<http://davidharvey.org/2012/01/reading-marxs-capital-vol-2-class-01/>> [accessed 1 August 17]

³³ John Bellamy Foster, *Marx’s Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000); Paul Burkett, *Marx and Nature: A Red and Green Perspective* (New York: Haymarket Books, 2015); John Bellamy Foster and Paul Burkett, *Marx and the Earth: An Anti-Critique*, Historical Materialism, vol. 115 (Boston: Brill, 2016).

interventions of degradation and exploitation, such as carbon emissions. The climate has been shaped by capital through centuries of industry and the irreversible effects of climate forcing, as detailed in the reports of the Intergovernmental Panel of Climate Change (IPCC).³⁴ These historical ties between capital as an industrial practice and the climate as a domain that is exploited and degraded, are what many have termed the ‘anthropocene’, implying human shifting of the climate—or what Jason Moore has aptly dubbed the ‘capitalocene’.³⁵ Moore means to mark the vital role capitalist modes of industrial production have played in the way ‘humans’ have shifted the climate. He thereby interrogates the ‘anthro-’ of anthropocene. It is not that human life inherently involves the processes of exploitation and degradation that explain climate change. These dynamics are not necessary facets of humanity and do not apply equally to all humans; they have been imposed upon life through the dominant ‘morality’ of capital.

Yet, the ecology is more than a material substrate of industrial production. Language, ideas, representations and concepts are at play in the relationship between capital and life, working beyond resource exploitation, atmospheric pollution and toxic degradation. That is, the manipulation of nature goes beyond visible use, waste and pollution. Capital has manipulated life into a symbolic structure, a moral ground, serving as conceptual substrate to its modes of production. Ideas of the “ecology” are hence at play in transnational capitalism and the forces of globalisation. I

³⁴ IPCC Report 2014 Working Groups, *Climate Change 2014*, ed. by Core Writing Team, Rajendra K. Pachauri and Leo Meyer (Geneva: Intergovernmental Panel on Climate Change, 2014), available online <<http://www.ipcc.ch/>> [accessed 03 April 17].

³⁵ Jason Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (London: Verso, 2015).

think here of the work of Kalindi Vora, who argues that life in India was transformed, through a long history of colonial social relations, into ‘vital energy’ for use, consumption and production.³⁶ Rather than analysing how this system exists in the present, Vora seeks to point out ‘a longer history of power relations underpinning what may seem like an emerging form of biopower’.³⁷

The ecology (human and nonhuman biological life) carries the representative quality of vitality to which Vora refers. But that is not to say that ‘natural resources’ have been used as ‘fuel for consumption’. Rather, the ecology has been fashioned into a symbolic structure that to some extent predicates the transformation of humans and nonhumans into vital matter. History has brought about the formation of concepts about the ecology that re-express the ecology through its service to capital. These are divisive concepts, as they are often used to instigate social and economic structures that fracture along lines of ethnicity, gender, race, class, religion and generation. The terminology of the anthropocene hence distracts from the real need to interrogate the colonial histories and contemporary effects of these symbolic structures, and I purposefully avoid that term in the forthcoming work. Anthropocene does nothing to suggest the way operations of power are embedded in symbolic structures of the ecology. Collectivising humans distracts from the divisive role the ecological

³⁶ Kalindi Vora, ‘Life Support: India’s Production of Vital Energy’, *Life Support: Biocapital and the New History of Outsourced Labor*, Difference Incorporated, ed. by Roderick A. Ferguson and Grace Kwungwon Hong (London: University of Minnesota Press, 2015), pp. 1–24.

³⁷ Vora, ‘Life Support’, p.13.

concepts play in the production of all life, through the instantiation of social and economic relations.

According to Joan Martinez-Alier, the ecology is a space where ‘social conflicts’ play out.³⁸ Through conflicting ‘languages of values’, the livelihood, economic security, resources and health of the poor are superseded by the priority of economic growth.³⁹ In this understanding, the ecology is a figurative space that is being used as a technology to produce social separateness, in line with Cedric Robinson’s critique of racial capitalism.⁴⁰ This social separateness befits capitalist modes of production. The disposability of one set of symbolic terms for nature, in preference for another set of terms, can be used to transform people into disposable labour. For Martinez-Alier, land resources and labour resources hence intersect through conflicts of ecological values, which express North-South divisions. The subjects of his enquiry are communities in Africa, South America and India, through which he argues that the North has profited, through disposing of local and indigenous environmental values. For Martinez-Alier, ‘poverty and powerlessness result in the local environment and health being sold cheaply’.⁴¹ The social separateness that different sets of environmental values insinuate can be exploited for profit. Hence, this involves the

³⁸ Joan Martinez-Alier, *The Environmentalism of the Poor: A Study of Environmental Conflicts and Valuation* (Cheltenham, UK: Edward Elgar Publishing, 2002).

³⁹ Martinez-Alier, *The Environmentalism of the Poor* (2002).

⁴⁰ Cedric J. Robinson, *Black Marxism: The Making of the Black Radical Tradition* (London: University of North Carolina Press, 1983). See also Jodi Melamed, ‘Racial Capitalism’, *Critical Ethnic Studies* 1.1 (spring 2015), 76–85.

⁴¹ Martinez-Alier, ‘The Environmentalism of the Poor as an Environmentalism of Livelihood’, *The Environmentalism of the Poor*, pp.41–50, p.47.

supersession of all concepts of the ecology that accord with economic growth, over all other concepts, perhaps grounded in other values, such as the livelihood, health, security or environmentalist concerns of vulnerable indigenous communities.

The ecology is therefore a technology for sustaining socioeconomic patterns. For Naomi Klein, how we think about the atmosphere has allowed some countries to develop through industry, stunting the development of others. She argues that the atmosphere is where we can see the legal and political frameworks that assign different nations different capacities to emit carbon dioxide.⁴² These legal and political frameworks have henceforth been divisive boundaries for restricting growth in certain areas and advancing industry in others. This disregards the livelihoods, health and environmentalist concerns of those populations who are left out of the global carbon calculus. The United States (US), the United Kingdom (UK), and select European Union (EU) countries, as high-income “stakeholders” in the monetisation of the atmosphere, have been allowed to grow their industries through carbon emissions. This implies a kind of service-industry logic to how we think of the atmosphere. I think here of the work of Blake Hudson, who uses Elinor Ostrom’s commons analysis to suggest that air or ‘natural capital’ in the US, has been transformed into a privatised space, with the federal government figured as the ‘producer’ of NO_x gas and fossil fuel burning industries as the ‘provider’.⁴³ The problem here is the very

⁴² Klein, ‘Sharing the Sky: The Atmospheric Commons and the Power of Paying Our Debts’, *This Changes Everything*, pp.288–418, p.416.

⁴³ Blake Hudson, ‘Decentralization of the Commons’ and ‘Federalization of the Commons’, *Constitutions and the Commons: The Impact of Federal Governance on Local, National, and Global Resource Management*

notion of ‘emission capacity,’ a representative framework that overlays industrial legal and political formulae over the atmosphere. The idea of an emission capacity, though seemingly stemming from an environmentalist desire to cap pollution, presides over the socioeconomic logic that will always prefer pollution to environmentalism, or always prefer labour to life.

The violence of this technology takes ‘slow’ effect.⁴⁴ It is this ‘slow violence’ that Rob Nixon understands as the non-spectacular, incremental, accretive and ‘environmentally embedded violence’ of ecological colonialism.⁴⁵ For Nixon, it is necessary to take a long historical view on violence when we are attempting to understand these slow effects. I am sympathetic to this perspective of the role of history and time. Concepts of the ecology appear to me as violent accretions. Overlaying nature, these concepts have allowed for the incremental transformation of bodies and space into labour and land resources, or the production of what we know as biopower. I am sympathetic to the emphasis of slowness, depth and increment, over any tendency, when thinking about the operations of power, to focus on events, acts or instances. Fredric Jameson seems to me equally sympathetic to these emphases on depth and slowness, when thinking about the incremental advance of colonialism through time. He writes:

The older village structures and precapitalist forms of agriculture are now systematically destroyed, to be replaced by an industrial agriculture whose

(Abingdon, Oxon: Resources for the Future Press, 2014), pp.45–82, p.71, pp.83–116, pp.96–99. Cf. Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, 5 (Cambridge: Cambridge University Press, 1990).

⁴⁴ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (London: Harvard University Press, 2011).

⁴⁵ Nixon, ‘Introduction’, *Slow Violence*, pp.1–44, pp.2–7.

effects are fully as disastrous as, and analogous to, the moment of enclosure in the emergence of capital in what was to become the first world. The “organic” social relations of village societies are now shattered, an enormous landless preproletariat “produced,” which migrates to the urban areas (as the tremendous growth of Mexico City can testify), while new, more proletarian, wage-working forms of agricultural labor replace the older collective or traditional kinds. Such ambiguous “liberator” needs to be described with all the dialectical ambivalence with which Marx and Engels celebrate the dynamism of capital itself in the *Manifesto* or the historical progress achieved by the British occupation of India.⁴⁶

The production of labour has a long history, at all moments directly tied to differently shaped ideas of how society and the ecology, labour and land, relate to one another. The idea of organic social relations is posited and undone in order to produce the migratory ‘landless’ preproletariat. As ‘landless,’ the preproletariat must migrate to urban areas, where labour is concentrated, as if in a “new,” landless form. Agricultural labour also appears as “new,” reconceptualised as wage-working labour as if liberated from the land. This liberation draws the preproletariat from their ‘organic’ forms of life, hence allowing them to be bound into socioeconomic relations. To return to Marx, ‘while upsetting the naturally grown conditions’, capitalist production ‘imperiously calls for its restoration as a

⁴⁶ Fredric Jameson, ‘Periodizing the 60s’, *The 60s Without Apology*, ed. by Sohnya Sayres, Anders Stephanson, Stanley Aronowitz and Fredric Jameson (Minneapolis: University of Minnesota Press, 1984), pp.178–209, p.185.

system, as a regulating law of social production'.⁴⁷ The increments through which these changes are happening mark huge shifts in history. Approaching the way labour and land, or more expansively, economic and ecological patterns, relate to one another requires a deep history that attends to the non-spectacular increments of time.

Such broad temporal brush strokes reveal the way different conceptions of the ecological have been used to produce the social. Yet I would also add that how these concepts move through time is two-fold. Concepts of the ecology are 'environmentally embedded'—as if natural, as if springing from nature. Hence, not only do these concepts allow biopower to be produced, they also perform as symbolic structures that come to obscure social inequities and socioeconomic distortions. These concepts of the ecology as such, serve to naturalise the incremental violence they facilitate. They harmonise biocapital into ecological orchestration. This echoes the thought of Adrian Parr, who writes:

[...] capitalism appropriates limits to capital by placing them in the service of capital; in the process, it obscures the inequities, socioeconomic distortions, and violence that these limits expose, thereby continuing the cycle of endless economic growth that is achieved at the expense of more vulnerable entities and groups.⁴⁸

⁴⁷ Karl Marx, 'Section 10: Modern Industry and Agriculture', *Capital*, vol.1, pp.329–330.

⁴⁸ Adrian Parr, 'Climate Capitalism', *The Wrath of Capital: Neoliberalism and Climate Change Politics*, New Directions in Critical Theory, ed. by Amy Allen (New York: Columbia University Press, 2013), pp.8–21, p.11.

Parr alludes to the notion of using whatever limit is placed in the service of capital to expose the limitations of that project. I want to integrate time and concepts into this argument—not just time, but slow time, slow violence, or the deep history of how an operational concept was formed. There are concepts of the ecology that are working in the service of capital, and it is necessary to bring those concepts to light as fabrications. This means realising the fundamental roles those concepts have to play in the contemporary moment. It means moving toward unfolding the deep histories that are called into play—the increments through which those ideas have advanced. It means mapping the emphatic violence of an idea in the present, as an accretive violence of conceptual forming. If we want to understand the ‘conceptual violence’ of biopower in the present, to use Vora’s terminology, then we have to expose and critique the historical processes of conceptual formation: the way a concept comes into being, and is made to seem necessary, natural and universally applicable.⁴⁹

This is the sort of historical process I am approaching in the forthcoming work. Each chapter is going to extend a hand through history to a set of materials I feel can expose the way in which a concept of clouds formed or came into being. I am going to work through the choice of clouds momentarily, but before I do so I want to talk further about my method of using history.

In chapter one, I find my way to Aristotle and Ancient Greece through two avenues. Firstly, analysing cloud-computing handbooks it becomes evident that computational modes of social interpellation are being

⁴⁹ Vora, ‘Introduction’, p.16.

conceived through ideas of Ancient Greek *agora*. This may strike the reader as unusual. However, upon interrogation, it becomes evident that this is not the first time that writers have attempted to allude to the architectonics of Ancient Greece in order to envisage the forms of democratic participation they feel digitality facilitates. The associations between the *agora* and computational modes of social interpellation extend back to mid-1980s hyperbole about networks, and what computers might mean for social participation. This opens computational social interpellation to exactly the sort of criticisms we can vocalise about the *agora*. That is, these were spaces where social relations were primarily economic, and where participation was determined by race, gender and generation.

This is one avenue into the history of clouds, yet the relationship with Ancient Greece is much more complex than a collision of *cloud* and *agora*. Indeed, the second avenue through which I find my way into the Ancient Greek materials is via the late-twentieth-century theoretical writings of Jean-Pierre Vernant (1914–2007) and his collaborator Pierre Vidal-Naquet (1930–2006). Vernant is known for having developed the analysis of classical texts toward historicism. Vernant attempted to diagnose Greek cultural *episteme* through the analysis of language in extant Greek texts. He understood how social thought operated, and how Greek society was structured, through the tragic texts that have remained over time. A key concept to Vernant is the idea that Greek society descended into states of *hubris* or *lyssa*, and that these states left someone outside the bounds of social law. This, he believed, was key to how that social law necessitated its regulatory orders. A Dionysian excess of mind was permitted so that a

person could be drawn back into the disciplinary order of the city-state. What is absolutely fascinating is that Vernant refers to this *hubris* as a ‘cloud of *atē*’. This suggests that clouds are somehow beyond social law, yet also, and fundamentally, within that social law. It suggests that people leave the social to enter into the chaos of a cloud, before this externality delivers them back into the social order of the state. The grid of the social produces clouds as excessive extension or lacerations of order, situating clouds as chaoid non-structures that re-focus social regulatory orders.

Aristotle (384–322 BC) has a key role to play in the analysis of this concept of clouds. My focus on Aristotle developed as I was working to analyse how Friedrich Nietzsche (1844–1900) uses clouds as imagery in *The Birth of Tragedy* (1876), in the process of analysing how Vernant uses clouds in *The Origins of Greek Thought* (1982), *Myth and Thought Among the Greeks* (1983) and *Myth and Tragedy in Ancient Greece* (1990). Through the lens of Vernant’s analysis of Ancient Greece, ideas of order and disorder appear conflated in clouds, which model a space beyond social law yet fundamental to social interpellation. Vernant uses clouds as imagery to express how tragedy performs this interior-exterior logic. Similarly, Nietzsche uses clouds to illustrate his understanding of the de-sublimatory function of Greek theatre gatherings – though this theory is not drawn from close analysis of Greek plays or extant Greek theatre texts, but rather, it seems, from a philosophical juxtaposition of order and disorder, often given the shorthand of Apollo and Dionysus. Whilst neither writer suggests any direct link between their theorisation of clouds and Aristotle’s work, in connecting clouds and theatre events, Vernant and Nietzsche seemed to be

covertly theorising a bridge between Aristotle's *Meteorologica* and *Poetics*, two texts that could not seem further apart in their subject matter. In the *Meteorologica*, Aristotle describes clouds as processes of gathering and separation. Aristotle means the dynamic of tearing and forming that is visible in the way clouds come-into-being in the sky, precipitate, and then form again, in a continuum. Through Nietzsche and Vernant, I make the move to compare this idea with Aristotle's ideas about theatre gatherings, arguing that 'gathering' does not only denote the processes of cloud formation in the *Meteorologica*, but equally denotes social gatherings for theatrical events at the Festival of Dionysus. Retrospectively reading this connection between theatre events and clouds into Aristotle assumes a latent anthropomorphic quality of meteorological phenomena, bringing to the fore the extent to which Aristotle was influenced by Empedoclean theories of Love and Strife. My reading of Aristotle is hence not intended to present a new interpretation of his texts, and for this reason the thesis overlooks arguing toward or away from hermeneutic paradigms in Aristotelian studies. My reading of Aristotle is secondary to my efforts to understand how any latent anthropomorphism in the concept of clouds as gathering has been reignited in the paradigm of the cloud concept as an escapist space, free from social law. As a social mechanism, the cloud concept iconographically reinforces and naturalises the idea that all humans should be tearing and forming, thereby entering every person into this interior-exterior relational logic of social interpellation. I was interested to pursue the identification between humans and clouds gathering, and it was this identification that carried me to Aristotle's writings. In this sense, Aristotle is very much read

through writers such as Vernant and Nietzsche, whilst other paradigms in Aristotelian studies are overlooked.

Chapter two uses history in a less linear manner, and the long history of this chapter is reached not by avenues but by branches or bifurcations. Here I want to understand how the symbolic structure of clouds operates. The branches of this chapter hence extend outwards from the idea of clouds as signs or signifiers. This signifying functionality is at play in the post-structuralist writings of Michel Serres (b.1930). Serres has worked to theorise clouds in several of his texts, and they are image-objects through which he projects his theory of forms as topological swarms of atoms. Serres condenses his ideas about atomism and topology into clouds. Doing so, he figures clouds through the late twentieth-century recession of matter into information making clouds, into informationalist bodies of data. The mechanisation of clouds as signs is equally at play within the nineteenth-century British colonial uptake of a poem entitled *Megha-dūta*, or ‘Cloud Messenger’, translated by Horace Hayman Wilson (1786-1860). In his 1813 translation, Wilson read the cloud messenger as a literal vehicle for messages, whereas in the original poem this is only ever a fantasy. Assimilating this fantasy into the western cannon, Wilson tries to translate the cloud messenger through drawing parallels to Shakespeare’s *Antony and Cleopatra*. These parallels hinge on the allusion to the Early Modern practice of building cloud machines, and the ability of clouds to convey or symbolise.

The sign-function of clouds in the Early Modern theory and practice of building cloud machines allowed clouds to be used to convey actors onto

stage or to suspend deities in paintings. This parallels Serres' informationist concept of clouds, revealing how an ecological concept is brought into being when an environmental form is input into a machinic assemblage. When clouds are put into Early Modern cloud machines they become modes of conveyance or deific signs. When clouds are put into Wilson's mechanisms of Orientalist appropriation, they become information compatible, or messengers. When clouds are input into Serres' writing machine, they are output as topological agglomerations of matter-as-information. In this sense, what relates these materials within the conceptual history of clouds is the relationship between ecology and machine. This chapter is not about an isolated aspect of an ecological concept. It is about how that concept is working, how it is put to work. This does come down to questions of abstraction and association, and I do look at the way labour is abstracted from life in order to produce the spectacle of clouds as signs. But I am also thinking here of the life of clouds. The long history of this chapter is the long relationship between clouds and their mechanically produced sense.

The historical dimension of chapter three is sparked by an error of self-historicisation. The French art theorist and historian, Hubert Damisch (b.1928), claims to have 'invented' an 'elastic concept' in the late-1950s to 1970s.⁵⁰ He claims that this elastic concept is drawn from his thinking about clouds, which began with a published essay in 1958 and continues to this day, serving as non-systematic subterfuge, or as non-structured horizon of structuralist thought. Deleuze and Guattari's investment in this concept, in

⁵⁰ Hubert Damisch and Stephen Bann, 'A Conversation', *Oxford Art Journal*, 82.2 (2005), 157-181 (p.160).

their final work *Qu'est-ce que la philosophie?* [*What is Philosophy?*] (1991), suggests a different history. They associate Damisch's ideas of elasticity with his analysis of the art brut artist Jean Dubuffet (1901–1985). Through correcting this error of self-historicisation, I unfold the history of the racialised logic of elasticity. This brings me to more thoroughly interrogate the role that the elastic concept had to play in Deleuze and Guattari's preceding works. The conceptual compatibility between the anti-capitalist dimensions of their radical philosophy and the theorem of elasticity or flexibility is striking. If Deleuze and Guattari's work has become foremost in how neoliberalism is articulated, then this involves the re-organisation of the elastic concept through its racist history, and in that, of anti-capitalism through capitalist modes of production and the implied dynamic of usurpation and expropriation.⁵¹ The elastic concept, key to the radical, anti-capitalist project, has been re-rooted into the colonial history that gives it meaning.

This structure of thought is extended to the nineteenth century, where I offer a parallel history of the elastic concept of clouds. John Ruskin (1819–1900) attempted to position artists and the arts beyond the political economy, through idealising artistic labour as a non-structured event of creative, organic form. He valorised J.M.W. Turner (1775–1851) and his cloud studies for fulfilling these terms of artistic freedom. However, while Ruskin wished for an artist whose forms arose organically, from a socially liberated artistic practice, Turner was not this ideal artist, and the content of

⁵¹ Luc Boltanski and Ève Chiapello, 'Management Discourse in the 1990s', *The New Spirit of Capitalism*, trans. by Gregory Elliott (London: Verso, 2005), pp.57-102.

his sketchbooks and notebooks demonstrate just how intimately his finances were related to his cloud studies. What Turner's works provoke is the economic logic that underwrites the emergence of clouds as non-structures, or as elastic forms. Luke Howard's scientific language for clouds disseminated this economic logic of elastic forms, as if objective fact. Howard chose Latinate terms for describing the basic structures of clouds, developing a morphological language that could describe 'transitional' forms. Adopting an ecofeminist position, writers such as Val Plumwood, Greta Gaard and Ariel Salleh have written against the androcentrism of the natural sciences.⁵² Following this movement, I pursue a queer ecofeminist critique of the Latinate terms *cirrus-stratus-cumulus*, exposing the way that these terms are inflected with androcentrism and Eurocentric imperialism.

Strikingly, Nietzsche is a key figure in the dissemination of this scientific discourse. Nietzsche suffered from chronic illness, and took up the nineteenth-century pursuit of climate tourism. He owned and read health tourism books, and built upon this knowledge by reading around the natural sciences, where the emerging practice of meteorology, and the nomenclature of clouds, had a prevalent role. This brings a biographical dimension to the many cloud metaphors that peppered his late writings, many of which were written during his time convalescing at Sils-Maria in the Swiss Alps. Nietzsche, as Ruskin before him and Deleuze and Guattari after, uses clouds as image-objects for enacting the anti-systematic of their thought. Hence,

⁵² Val Plumwood, 'Androcentrism and Anthrocentrism: Parallels and Politics', *Ethics and the Environment*, 1.2 (Fall 1996), 119–152; Greta Gaard, 'Toward a Queer Ecofeminism', *Hypatia*, 12.1 (Winter 1997), 114–137; Ariel Salleh, *Ecofeminism as Politics: Nature, Marx and the Postmodern* (London: Zed Books, 1997).

this chapter is about historicising how flexibility is instrumentalised in the valorization of the non-systematic, revealing the colonial histories that underwrite flexibility. If flexible is a constant state of unbreakable instability, then flexibility has been transposed into an economic logic of life in an era of late capitalism. The conceptual history of clouds reveals there is nothing new about this logic of the elastic.

Though the thesis does not claim to be chronological there are of course some historical continuities, even between the chapters. This introduction seems the place to frame those inter-chapter continuities, as I will not always have the opportunity to step out of the trajectory of a chapter to do so. In chapter two, Aristotle features twice. Firstly, Aristotle features in the working theory of clouds as signficatory functions. Serres draws these ideas from Lucretius, whose atomistic theory of swarms of atoms, agglomerating or coming-together into forms, may appear aligned with Aristotle's theories of gathering. Aristotle enters again when I reflect on the Early Modern theory clouds as signs, which was drawn from Averroes's reading of the *Meteorologica*.⁵³ A brief note on these two continuities: it is not possible to retroactively read the argument of chapter two into chapter one. Aristotle does not conceive of clouds as messengers, signifiers, information-forms, nor as aesthetic-sign-functions, and so his ideas of gathering are not ideas of signification. If the sign-functionality emerges from the idea of gathering, it is through processes of assimilation that adjust the idea to fit within a broader logic of signification, informationalisation or

⁵³ Craig Martin, 'The Epistemology of Meteorology', *Renaissance Meteorology: Pomponazzi to Descartes* (Baltimore: The Johns Hopkins University Press, 2011), pp.21–37, p.25.

molecularisation. It was more important to understand how and why these processes were taking place by looking directly at clouds in those moments, than to establish some linear movement of thought from Aristotle to Serres.

It may be noted that Nietzsche does not only feature in chapter three, but is prevalent within chapter one, where I analyse Nietzsche's work upon the Festival of Dionysus in his early writings. Could this material be brought into the historicisation of his later use of clouds, as image-objects for enacting the anti-metaphysical of his thought? This elision could be carried out. Nietzsche's thinking about the Apollonian and the Dionysian do serve as one backdrop to anti-metaphysics, and his reading of the Dionysiac as a 'cloud' does feature in the biographical history of clouds as anti-metaphysical image-objects. However, Nietzsche's *The Birth of Tragedy* (1876) pre-dates the period when his travels and escalating illness gave him reason to engage with climatology, health tourism and meteorology. This is apparent when reading across his *oeuvre*, as the style of the late works indicate a writer who is thinking about clouds through scientific parameters, as opposed to an earlier writer who is working with Ancient Greek concepts of clouds. For this reason, though clouds may have transmitted into the late writings, the histories and implications of these concepts has shifted by the time he arrives at writing *Thus Spoke Zarathustra* between 1883-1885, and the semi-autobiographical *Ecce Homo* in 1888. The clouds of these late works are conceptually discontinuous with the ones in *The Birth of Tragedy*. For this reason, I have left the connection between Nietzsche's early and late works to the extensive scholarship that already contests this relationship of dis/unity.

I now want to set out the terms of the cloud concept. What follows is a diagnostic of the paradigmatic function of clouds in the present. This paradigmatic reading of clouds is sparked by the digital cloud and extends outwards into the present, across art, media theory and some aspects of eco-criticism. I argue that the contemporary cloud concept has three working parts: clouds are concepts of “gathering” or communalism; clouds are “signifiers” or modes of conveyance; and clouds are forms of “flexibility.” While the thesis works in these three registers, in the forthcoming part of the work I additionally introduce the thematic of the thesis: *tearing and forming*.



Figure 1: ‘Notwithstanding the soft-edged depiction of “the cloud” on network diagrams, it is neither a fuzzy (ill-defined) nor a fluffy (hyped) concept. It is easy to understand and it is big, big business’. Sacha Matulovich, ‘5 big reasons everything is moving to the cloud’, *Memeburn*, 29 Oct 2017.⁵⁴

The Cloud Concept

There are currently over 69 million posts tagged with *#clouds* on Instagram.⁵⁵ Considering the fact that users often hyperlink unrelated pictures that hold no overt connection to clouds—selfies, Pokemon Go screenshots, cups of coffee—this number of images tagged as ‘clouds’ is unsurprising. Mobile app and web-based users are daily piggybacking on

⁵⁴ Image credit: Sacha Matulovich, ‘5 big reasons everything is moving to the cloud’, *Memeburn*, 29 Oct 2017 < <https://memeburn.com/2015/10/5-big-reasons-everything-is-moving-to-the-cloud/> > [accessed 28 June 2016].

⁵⁵ Instagram, *#clouds*, < <https://www.instagram.com/explore/tags/clouds/> > [accessed 28 June 2017].

the fluctuating popularity of #clouds, in order to trend digital content extraneous to these ecological phenomena. This extension of a digitally mediated concept of clouds to heterogeneous phenomena suggests that ecological clouds in the present are performing paradigmatically. Indeed, the #clouds trend extends beyond social media and into technology and the arts. When artists such as choreographer Mathilde Monnier and visual artist Dominique Figarella collaborate on a soap-bubble-cloud medium for their Soapéra; or composer David Bowen devises a ‘cloud piano’ that produces sound-patterns ‘set in motion to function as if the clouds are pressing the keys on the piano as they move across the sky and change shape’; when Fujiko Nakaya builds cloud sculptures; or crowds gather in Saint Petersburg Square for the ‘Clearing Cloud Game’ of wishing the clouds away; when New York Maker Faire and artist Karolina Sobecka alike, offer participants the chance to ‘eat’ clouds and ‘think like’ clouds; or when computing ‘moves to the cloud’, does it suffice to say that clouds are ‘trending’?⁵⁶ Or must we seek to understand this trend as the cultural production of ideas and signifying practices, and think of the emergence and multiplication of

⁵⁶ Matilde Monnier and Dominique Figarella, *Soapéra*, choreography and foam, 2010, Spring Utrecht, Utrecht
 <<https://www.springutrecht.nl/soapera?language=en>> [accessed 28 June 2017]. David Bowen, *Cloud Piano*, installation, 2014
 <<http://www.dwbowen.com/cloud-piano>> [accessed 28 June 2017]. Fujiko Nakaya, *London Fog*, installation, 2017, Switch House, Tate Modern. Dr Emoto, ‘Report on Clearing Clouds Game in Russia on 11.11.11’, *Official Blog—Messages from Water*, 2 Dec 2011,
 <<http://emotopeaceproject.blogspot.co.uk/2011/12/report-on-clearing-clouds-game-in.html>> [accessed 28 June 2017]. Becket Mufson, ‘I Ate Clouds at the World Maker Faire’, *Vice Creators*, 26 Sep 2014,
 <<http://thecreatorsproject.vice.com/blog/i-ate-clouds-at-the-world-maker-faire>> [accessed 28 June 2017]. Karolina Sobecka, *Thinking Like a Cloud*, participatory performance/experiment, ongoing,
 <<http://www.amateurhuman.org/thinking-like-a-cloud>> accessed 28 June 2017]. Matulovich, ‘5 big reasons everything is moving to the cloud’.

‘cloud-like’ forms as a re-signifying procedure typical of the way working concepts mediate and normalise the ideological content of the social?

To begin, the cultural diagnostic of a *#cloud* trend must be situated in relation to the move to monetise clouds. Gavin Pretor-Pinney founded the Cloud Appreciation Society in 2005. The website adopts the tone of a social movement, with a polemical ‘Manifesto’. The “society,” however, which now has 43,359 members in 119 countries, is not registered as a not-for-profit organisation.⁵⁷ Though most of the 43,359 members are original members who paid a one-off fee, any newer members are paying for a Cloud-a-Day subscription service.⁵⁸ Members must subscribe to pay a yearly fee of £32.00, with a £10 sign-up fee, purchasing them a ‘Somewhat Occasional’ Cloud Newsletter, a badge, a certificate, an ‘Innovative Cloud Selector Wheel’, ‘Free entry’ to online conferences, 15% off in the ‘Cloud Shop’, and ‘help supporting the society’s development’.⁵⁹ Under the guise of an activist movement, clouds have been transformed into a site for service-oriented profiteering. Pretor-Pinney has additionally used the social media Twitter @CloudAppSoc username to crowd-source photos of proposed *undulatus asperatas* cloud, “campaigning” for the addition of this scientific cloud classification to the *International Cloud Atlas* of the World

⁵⁷ Sheena Russell, [PA to Gavin Pretor-Pinney (Cloud Appreciation Society)], email to the author, 29 June 2017. Consent to quote from this email was given.

⁵⁸ Russell, email, 29 June 2017.

⁵⁹ *The Cloud Appreciation Society* <<https://cloudappreciationsociety.org/cas-membership-intro/>> [accessed 13 July 16]. *NB* In the duration of this research project, the website design and membership terms and conditions have been continuously revised.

Meteorological Organisation (WMO).⁶⁰ This scientific movement has been re-embedded within the service-oriented ethos of the society, with a growing line of products available to traffic led to the site through the *undulatus asperatus* campaign. Users browsing the pages of the Cloud Appreciation Society can use their Paypal account to purchase cloud key rings, cloud earrings, cloud cushions, cloud cards, cloud calendars, cloud badges, cloud classification mugs (also on sale in John Lewis) and cloud t-shirts. Pretor-Pinney even markets a self-help book entitled *Every Cloud Has A Silver Lining (Keep Calm)* (Summersdale Series), contributing to the neoliberal austerity adoption of wartime propaganda, ‘Keep Calm and Carry On’.⁶¹

There is a distinct lack of critical reflection that situates cloud “activist” movements or cloud “campaigns”, in relation to the marketisation of clouds by global technology corporations. These cloud businesses are far larger than the Cloud Appreciation Society, with multi-million dollar corporations such as Google, Amazon and IBM economising the lexicon of clouds through selling ‘cloud space’, ‘cloud storage’ and other ‘cloud-based services’. Yet I would suggest that in their conceptual content there is little to distinguish an appreciation society that sustains itself on a particular way of thinking about and sentimentalising clouds, and a global technology

⁶⁰ Caroline Davies, ‘Amateur Cloud Enthusiast Dreams Up Name for Newly Identified Formation’, *Guardian*, 17 December 2015, <<https://www.theguardian.com/science/2014/dec/17/-sp-cloud-enthusiast-pretor-pinney-new-formation>> [accessed 25 July 2017]. *See also* Graeme Anderson, ‘Asperatus: the Application of Cloud Classification to a suggested New Cloud Type’ (unpublished MSc dissertation, Department of Meteorology, University of Reading, 2010).

⁶¹ Owen Hatherley, *The Ministry of Nostalgia: Consuming Austerity* (London: Verso, 2015).

corporation seeking to use clouds to mask over operative systems of economic dominance. Both use clouds as if they are already ideas, as if these forms are best thought of as concepts. This not only implies a link between clouds as conceptual commodities and clouds as forms of the ecology. Crucially, it implies that the digitally mediated concept has come to over-ride the real in the social conscience of these ecological forms.

The San Francisco-based artist Amy Balkin encapsulates this mediation of atmospheric form through economic relations. In her conceptual artwork *Public Smog* (2004-ongoing), Balkin disarms the corporate forms that fill our atmosphere. *Public Smog* began when Balkin purchased emissions offsets in 2004, creating conceptual works that are composed of legal, financial and political activities to do with the marketisation of the atmosphere.⁶² Balkin's work takes the form of a NO_x gas trading list (see figure 2). Balkin is listed as a trader showing her purchase of 24lbs of NO_x (these oxides of nitrogen are a threat to public health and an indirect contributor to climate change).⁶³

⁶² Amy Balkin, *Public Smog*, mixed media, ongoing, <<http://www.publicsmog.org/>>, [accessed 14 July 2016]. Consent from the artist was given to the author with regard to all images.

⁶³ The World Health Organisation report that symptoms of bronchitis in asthmatic children increases subsequent to long-term exposure to NO_x, documenting reduced lung function growth in cities in Europe and North America. World Health Organisation, *Ambient (Outdoor) Air Quality and Health* (Geneva, Switzerland: World Health Organisation, 2015), <<http://www.who.int/mediacentre/factsheets/fs313/en/>> [accessed 19 July 2016]. The Intergovernmental Panel on Climate Change note that NO_x alter the concentration of tropospheric ozone, indirectly affecting the climate: IPCC Report 2014 Working Groups, 'Annexes: Glossary', *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, pp.117-130, p.125.

7/30/2004

Trade Registrations Received Within the Past 90 Days

Registration Number	Seller ID	Seller Name	Buyer ID	Buyer Name	Emittant	RTC Expiring	Zone	Quantity (lbs)	Price (\$/lbs)	Trade Status	Trade Status Date	Date Received
7125	700066	NATSOURCE LLC	131003	BP WEST COAST PROD. LLC, CARSON RE	NOx	- 2006 to ;	Coastal	158,809	\$ 2.40	Processing trade; Comp	7/2/04	6/30/04
7125	700066	NATSOURCE LLC	131003	BP WEST COAST PROD. LLC, CARSON RE	NOx	1 and all y	Coastal	158,809	\$ 2.40	Processing trade; Comp	7/2/04	6/30/04
7126	800038	DOUGLAS PRODUCTS DIVISION	700066	NATSOURCE LLC	NOx	Jun - 2004	Coastal	15,000	\$ -	Processing trade; Comp	7/2/04	6/30/04
7127	700066	NATSOURCE LLC	700073	Multifuels, L.P.	NOx	Jun - 2004	Coastal	15,000	\$ 0.59	Processing trade; Comp	7/7/04	6/30/04
7128	700004	CANTOR FITZGERALD BROKERAGE, L.P.	135860	NAVERUS, INC	NOx	1 and all y	Coastal	9,198	\$ 6.44	Processing trade; Comp	7/15/04	6/30/04
7129	101337		700116	AMY BALKIN	NOx	Jun - 2004	Coastal	24	\$ 4.25	Processing trade; Comp	7/9/04	6/18/04
7130	800080	LINDA THAGARD OIL CO	700073	Multifuels, L.P.	NOx	Jun - 2004	Coastal	3,500	\$ 0.45	Processing trade; Comp	7/21/04	7/8/04
7131	700073	Multifuels, L.P.	115563	METAL COATERS OF CALIFORNIA	NOx	Jun - 2004	Coastal	3,500	\$ 0.85	Processing trade; Comp	7/21/04	7/8/04
7132	67945	GREAT WESTERN MALTING CO., INC.	700066	NATSOURCE LLC	NOx	- 2004 to ;	Coastal	7,700	\$ -	Processing trade; Comp	7/27/04	7/8/04
7132	67945	GREAT WESTERN MALTING CO., INC.	700066	NATSOURCE LLC	NOx	2 and all y	Coastal	7,700	\$ -	Processing trade; Comp	7/27/04	7/8/04
7133	700066	NATSOURCE LLC	700105	ENERGY INITIATIVE GROUP, L.P	NOx	- 2004 to ;	Coastal	7,700	\$ 2.35	Processing trade; Comp	7/29/04	7/8/04
7133	700066	NATSOURCE LLC	700105	ENERGY INITIATIVE GROUP, L.P	NOx	2 and all y	Coastal	7,700	\$ 2.35	Processing trade; Comp	7/29/04	7/8/04
7134	700020	ADV. ENV. CNTRL CONSULTING & ENGR.	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	- 2005 to ;	Coastal	3,200	\$ -	Processing trade; Comp	7/21/04	7/8/04
7135	700004	CANTOR FITZGERALD BROKERAGE, L.P.	101337	NATIONAL OFFSETS	NOx	- 2005 to ;	Coastal	3,200	\$ 1.86	Processing trade; Comp	7/27/04	7/8/04
7136	700105	ENERGY INITIATIVE GROUP, L.P	700004	CANTOR FITZGERALD BROKERAGE, L.P	NOx	Dec - 2004	Coastal	8,500	\$ -	Processing trade; Comp	7/21/04	7/8/04
7136	700105	ENERGY INITIATIVE GROUP, L.P	700004	CANTOR FITZGERALD BROKERAGE, L.P	NOx	Jun - 2005	Coastal	8,500	\$ -	Processing trade; Comp	7/21/04	7/8/04
7137	700004	CANTOR FITZGERALD BROKERAGE, L.P.	131732	NEWPORT FAB, LLC	NOx	Dec - 2004	Coastal	8,500	\$ 1.30	Processing trade; Comp	7/27/04	7/8/04
7137	700004	CANTOR FITZGERALD BROKERAGE, L.P.	131732	NEWPORT FAB, LLC	NOx	Jun - 2005	Coastal	8,500	\$ 1.80	Processing trade; Comp	7/27/04	7/8/04
7138	7427	OWENS-BROCKWAY GLASS CONTAINER	700004	CANTOR FITZGERALD BROKERAGE, L.P	NOx	Dec - 2004	Coastal	75,000	\$ -	Processing trade; Comp	7/21/04	7/8/04
7139	700004	CANTOR FITZGERALD BROKERAGE, L.P.	800181	CALIFORNIA PORTLAND CEMENT CO (NS	NOx	Dec - 2004	Coastal	75,000	\$ 1.30	Processing trade; Comp	7/28/04	7/8/04
7140	800372	EQUILON ENTER. LLC, SHELL OIL PROD.	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Jun - 2004	Coastal	35,000	\$ -	Processing trade; Comp	7/27/04	7/16/04
7141	800181	CALIFORNIA PORTLAND CEMENT CO (NS	700004	CANTOR FITZGERALD BROKERAGE, L.P	NOx	Jun - 2005	Inland	50,000	\$ -	Processing trade; Comp	7/21/04	7/8/04
7142	700004	CANTOR FITZGERALD BROKERAGE, L.P.	7427	OWENS-BROCKWAY GLASS CONTAINER	NOx	Jun - 2005	Inland	50,000	\$ 1.95	Processing trade; Comp	7/28/04	7/8/04
7143	700089	TRINITY OIL LIMITED	700004	CANTOR FITZGERALD BROKERAGE, L.P.	SOx	1 and all y	Coastal	221,760	\$ -	Processing trade; Comp	7/20/04	6/15/04
7144	700073	Multifuels, L.P.	16531	NEVILLE CHEM CO	NOx	Jun - 2004	Coastal	800	\$ 1.00	Processing trade; Comp	7/21/04	7/15/04
7145	700073	Multifuels, L.P.	3585	R. R. DONNELLEY & SONS CO, LA MFG DI	NOx	Jun - 2004	Coastal	1,900	\$ 0.89	Processing trade; Comp	7/21/04	7/15/04
7146	700073	Multifuels, L.P.	73022	US AIRWAYS INC	NOx	Dec - 2004	Coastal	1,327	\$ 1.20	Processing trade; Comp	7/21/04	7/16/04
7147	700004	CANTOR FITZGERALD BROKERAGE, L.P.	2537	CORONA CITY, DEPT OF WATER & POWEF	NOx	Dec - 2005	Coastal	2,379	\$ 3.25	Processing trade; Comp	7/28/04	7/16/04
7147	700004	CANTOR FITZGERALD BROKERAGE, L.P.	2537	CORONA CITY, DEPT OF WATER & POWEF	NOx	- 2006 to ;	Coastal	2,382	\$ 3.25	Processing trade; Comp	7/28/04	7/16/04
7147	700004	CANTOR FITZGERALD BROKERAGE, L.P.	2537	CORONA CITY, DEPT OF WATER & POWEF	NOx	Jun - 2006	Coastal	3	\$ 3.25	Processing trade; Comp	7/28/04	7/16/04
7148	700004	CANTOR FITZGERALD BROKERAGE, L.P.	101337	NATIONAL OFFSETS	NOx	Jun - 2004	Coastal	35,000	\$ 0.61	Processing trade; Comp	7/29/04	7/16/04
7149	131732	NEWPORT FAB, LLC	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Jun - 2004	Coastal	3,500	\$ -	Processing trade; Comp	7/29/04	7/16/04
7150	700004	CANTOR FITZGERALD BROKERAGE, L.P.	58427	TANDEM INDUSTRIES	NOx	Jun - 2004	Coastal	3,500	\$ 0.75	Processing trade; Comp	7/29/04	7/16/04
7151	800128	SO CAL GAS CO (EIS USE)	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Dec - 2004	Coastal	1,050	\$ -	Processing trade; Comp	7/29/04	7/16/04
7152	700004	CANTOR FITZGERALD BROKERAGE, L.P.	132071	DEAN FOODS CO. OF CALIFORNIA	NOx	Dec - 2004	Coastal	1,050	\$ 1.44	Processing trade; Comp	7/29/04	7/16/04
7153	800338	SPECIALTY PAPER MILLS INC	700073	Multifuels, L.P.	NOx	Jun - 2004	Coastal	4,746	\$ 0.45	Processing trade; Comp	7/28/04	7/19/04
7154	700073	Multifuels, L.P.	700066	NATSOURCE LLC	NOx	Jun - 2004	Coastal	30,300	\$ -	Processing trade; Comp	7/28/04	7/21/04
7155	700066	NATSOURCE LLC	800089	EXXONMOBIL OIL CORPORATION	NOx	Jun - 2004	Coastal	30,300	\$ 0.65	Processing trade; Comp	7/29/04	7/21/04
7156	112853	NP COGEN INC	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Jun - 2004	Coastal	68,414	\$ -	Processing trade; Comp	7/28/04	7/21/04
7157	700004	CANTOR FITZGERALD BROKERAGE, L.P.	800089	EXXONMOBIL OIL CORPORATION	NOx	Jun - 2004	Coastal	68,414	\$ 0.65	Processing trade; Comp	7/29/04	7/21/04
7158	700105	ENERGY INITIATIVE GROUP, L.P	700066	NATSOURCE LLC	NOx	- 2004 to ;	Coastal	7,700	\$ -	Processing trade; Data	7/27/04	7/8/04
7158	700105	ENERGY INITIATIVE GROUP, L.P	700066	NATSOURCE LLC	NOx	2 and all y	Coastal	7,700	\$ -	Processing trade; Data	7/27/04	7/8/04
7159	135974	NUOVO ENERGY COMPANY	135976	NUOVO ENERGY COMPANY	NOx	Dec - 2004	Coastal	500	\$ -	Processing trade; Comp	7/28/04	7/23/04
7160	135974	NUOVO ENERGY COMPANY	135978	NUOVO ENERGY COMPANY	NOx	Dec - 2004	Coastal	500	\$ -	Processing trade; Comp	7/28/04	7/23/04
7161	700105	ENERGY INITIATIVE GROUP, L.P.	124619	IMPRESS USA INC	NOx	Jun - 2004	Coastal	1,428	\$ 0.85	Processing trade; Comp	7/28/04	7/15/04
7163	700073	Multifuels, L.P.	104571	E & J TEXTILE GROUP, INC	NOx	Jun - 2004	Coastal	1,989	\$ 0.80	Processing trade; Comp	7/30/04	7/23/04
7164	800153	US GOV. NAVY DEPT LB SHIPYARD	700073	Multifuels, L.P.	NOx	Jun - 2004	Coastal	66,360	\$ 0.65	Processing trade; Comp	7/30/04	7/27/04
7165	133813	EI COLTON, LLC	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Jun - 2004	Coastal	22,823	\$ -	Processing trade; Comp	7/30/04	7/23/04
7166	700004	CANTOR FITZGERALD BROKERAGE, L.P.	20203	SCOPE PRODUCTS INC, DEXT CO	NOx	Jun - 2004	Coastal	615	\$ 0.81	Processing trade; Data	7/29/04	7/23/04
7167	700004	CANTOR FITZGERALD BROKERAGE, L.P.	800089	EXXONMOBIL OIL CORPORATION	NOx	Jun - 2004	Coastal	22,200	\$ 0.65	Processing trade; Data	7/29/04	7/23/04
7168	101337	NATIONAL OFFSETS	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	Jun - 2004	Coastal	124,000	\$ -	Processing trade; Comp	7/30/04	7/23/04
7169	700004	CANTOR FITZGERALD BROKERAGE, L.P.	800089	EXXONMOBIL OIL CORPORATION	NOx	Jun - 2004	Coastal	134,000	\$ 0.72	Processing trade; Data	7/29/04	7/23/04
7170	50813	O'BRIEN CALIF COGEN LTD	700004	CANTOR FITZGERALD BROKERAGE, L.P.	NOx	- 2005 to ;	Coastal	17,410	\$ -	Processing trade; Comp	7/30/04	7/23/04

Figure 2: Amy Balkin, *Public Smog*, NO_x gas trade registrations, 2004–ongoing.

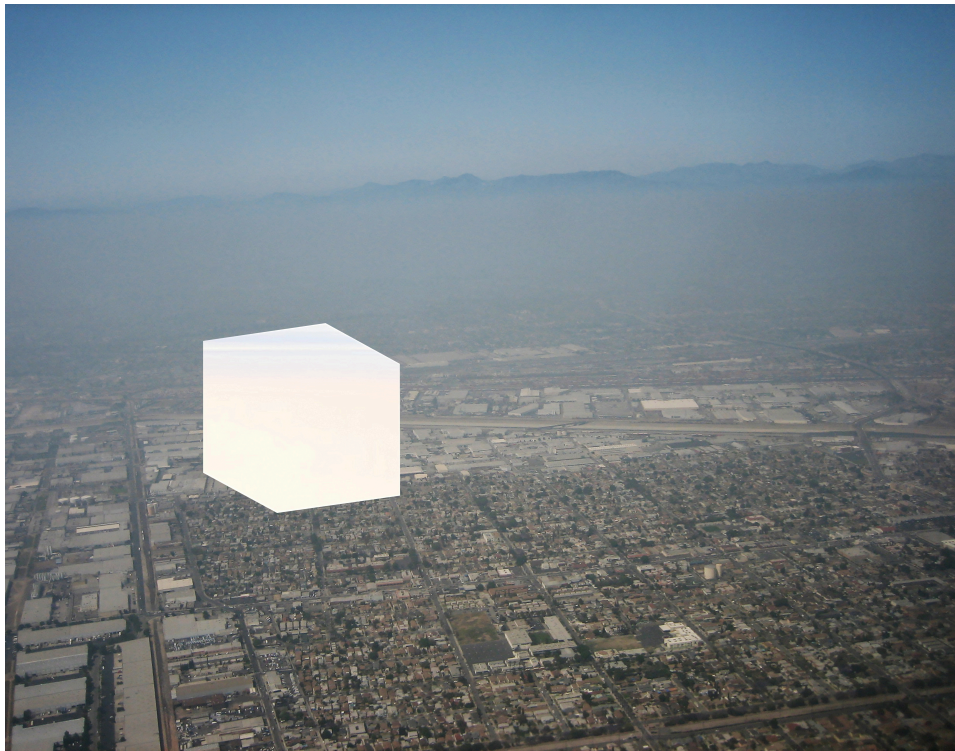


Figure 3: Amy Balkin, *Public Smog*, Los Angeles, 2004–ongoing.

In visualising these trade purchases (see figure 3), Balkin produces aesthetic forms of the sky, not as ‘real’ clouds, but as conceptual forms shaped through stocks. I am struck by the effect of these ‘cloudlike’ regions in recapitulating the atmosphere as private commodity. The NO_x emissions units that Balkin purchases are tradable units of the total US emissions budget of NO_x (alongside SO₂), made law by the 1990 Clean Air Act Amendments (1990 CAAA), and cemented by the NO_x SIP Call and NO_x Budget Programme.⁶⁴ This US legislation builds on the 1970 Clean Air Act Amendment, which imposes fossil fuel burning limits across US states—mainly affecting electric power generators, but also affecting individual fossil fuel burning industries.⁶⁵ The legislation was made following studies revealing the environmental and architectural damage of acid rain, and public health hazards of NO_x. The idea is to reduce the total budget of harmful gases and support industries in their compliance of this reduction. However, the law effectively makes the atmosphere a tradable commodity.

Balkin purchases the right to emit noxious gases into the atmosphere in order to offset the tradable units of emissions gases. In doing so, she declares her privately owned unit a literal airspace, opening this space as a public park. This creates a conceptual space, above cities such as LA [figure 3], visualised in the photographic documentation as public lacerations in the urban smog. These conceptual ruptures reveal the extent to which the atmosphere is already a conceptual domain that is traded and exploited by private corporations. In this respect, Balkin’s artworks parallel those of

⁶⁴ Deborah Stowell, ‘Building Markets’, *Climate Trading: Development of Greenhouse Gas Markets* (Basingstoke, Hampshire: Palgrave MacMillan, 2005), pp.82–125, pp.91–93.

⁶⁵ Stowell, ‘Building Markets’, pp.91–93.

HeHe, an activist and art collective comprised of Heiko Hansen and Helen Evans. In their work *Nuage Vert* (2008), they project green light onto pollutant industrial smoke coming from factories on city skylines.⁶⁶



Figure 4: HeHe, *Nuage Vert*, installation, light and industrial pollution, 2008.

As HeHe highlight in their co-authored article, the pollutant plume is the visible effect of climate shifting.⁶⁷ By lighting the cloud green, HeHe highlight the engineered forms of industrial clouds.⁶⁸ The cloud computing industry is performing a paradigmatic role in this engineering of clouds. Firstly, the supercomputers that ‘house’ the hardware of cloud computing

⁶⁶ HeHe, *Nuage Vert*, installation, light and industrial pollution, 2008.

⁶⁷ HeHe, ‘On the Modification of Man-Made Clouds: The Factory Cloud’, *Leonardo: International Journal of the Contemporary Artist*, 47.1 (2014), 72–73.

⁶⁸ HeHe, ‘On the Modification of Man-Made Clouds’.

services produce at least 2% of global carbon emissions.⁶⁹ The cloud computing industry is hence responsible for engineering pollutant clouds. In another respect, the cloud computing industry is increasing its role as a mediator of weather and climate data. As a working example, in October 2015, IBM finalised a deal putting them in charge of the digital assets of The Weather Company.⁷⁰ This acquisition of live weather data by a global leader of the IT market, re-values climate observations according to the market value of weather analytics. Moreover, this re-valuation is mediated through the cloud computing industry. Under the management of IBM, the distributed networks of the cloud computing industry are valuable weather analytic tools, allowing The Weather Company to analyse social media using rubrics, such as *#clouds*, cross-referencing these with computer-generated weather forecasts in order to feed back into valuable road and transport information.⁷¹ In this sense, the cloud computing industry mediates weather ‘facts’ and climate ‘truths’. This industrial phenomenon is coming to condition the truthhood of the climate.

In another UK-based example of this re-mediation of the climate, through the medium of the cloud computing industry, the Met Office recently lost the BBC weather forecast contract (the new data service is yet

⁶⁹ Bryan Walsh, ‘Your Data is Dirty: The Carbon Price of Cloud Computing’, *Time* (2 April 2014), <<http://time.com/46777/your-data-is-dirty-the-carbon-price-of-cloud-computing/>> [accessed 18 April 16].

⁷⁰ Clare Hopping, ‘The Weather Company Chooses IBM to Power Weather Predictions’, *Cloudpro*, 25 July 2016, <<http://www.cloudpro.co.uk/business-intelligence/6171/the-weather-company-chooses-ibm-to-power-weather-predictions>> [accessed 25 July 2016].

⁷¹ Eric Berger, ‘IBM puts the clouds in cloud computing, acquires [sic] The Weather Company’, *Ars Technica UK*, 29 October 2015, <<http://arstechnica.com/science/2015/10/ibm-puts-the-clouds-in-cloud-computing-acquires-the-weather-company/>> [accessed 15 July 2016].

to be named). As a public service, the BBC is legally bound to lower their financial outgoings. They can do so by seeking providers who use the cloud computing industry to lower the cost of data collection and analytics, by using tools such as social media as crowdsourcing methods, exploiting the labour of users of social media to reduce overheads. This is why the weather now starts with a photo from a ‘member of the public’, whose free labour we must see as complicit in loss of the BBC contract by the Met Office. Within a cloud economy, the BBC can capitalise upon computer networks and their users in order to reduce the cost of monitoring real clouds, thereby monetising clouds through #clouds.

Cloud computing industry handbooks instrumentalise history to justify this business model. In examples such as *Mobile Clouds: Exploiting Distributed Resources in Wireless, Mobile and Social Networks* (2014), Frank H. P. Fitzek and Marcos D. Katz define the role of cloud computing industries in a mobile era as a model of social resource pooling, dating the disciplinary and behavioural principles of these industries to the 1960s.⁷² Periodizing the principles of the cloud computing industry to this time, Fitzek and Katz attempt to tell the natural history of data sharing and digital co-option, in a chapter that opens:

Since the 1960s a great deal of research has been carried out in this field, but here we will try to understand key essential principles of cooperation.

These principles, inferred from cooperative behavior of Nature, ultimately

⁷² Frank H. P. Fitzek and Marcos D. Katz, ‘Social Aspects of Mobile Clouds’, *Mobile Clouds: Exploiting Distributed Resources in Wireless, Mobile and Social Networks* (Chichester, West Sussex: Wiley, 2014), pp.107–116, p.107.

serve as inspiration sources while developing cooperative rules for mobile clouds. Understanding the cooperative rules of vampire bats, monkeys, cheetahs, and hyenas the most important rules can be derived. There are many more examples from Nature such as the symbiosis of the lycaenid butterfly larvae with ants, and others. The rules are often very simple and can be directly implemented on mobile devices, leading to cooperative gains without complexity.⁷³

This codification of ‘Nature’ (with a capital ‘N’) stands to reciprocally produce the social as an informationalised or codified form, where relationships are about complying with rules of digital reciprocity and participation. The cloud computing industry is a networked medium based on these rules, through which the social must pass.

As a further example, Joe Weinman opens his text on the economics of the cloud computing industry, *Clouconomics* (2012), by outlining his version of the history of the coinage of ‘the cloud’, before continuing to relate a ‘human history’ of resource pooling.⁷⁴ Weinman looks at Roman irrigation systems and argues that these models of resource pooling have *a priori* social relevance and justification through the ‘human history’ of supply-and-demand industrial economic relations. In stating so, he cites Don Tapscott’s much earlier publication *Digital Capital* (2000) (co-written with David Ticoll and Alex Lowy).⁷⁵ Here, they trace the use of the term ‘Agora’ in digital lexis to Greek society:

⁷³ Fitzek and Katz, ‘Social Aspects of Mobile Clouds’, p.107–8.

⁷⁴ Joe Weinman, ‘A Cloudy Forecast’, *Clouconomics: The Business Value of Cloud Computing* (Hoboken, N.J.: Wiley, 2012), pp.1–16, p.2.

⁷⁵ Weinman, ‘Does the Cloud Matter?’, *Clouconomics*, pp.17–28, p.23.

Agora. The agora of ancient Greece was originally the assembly of the ancient people, convoked by the king or one of his nobles. The word then came to mean the place where assemblies gathered, and this place then evolved to become the city's center for public and especially commercial intercourse. We apply the term to markets where buyers and sellers meet to freely negotiate and assign value to goods ⁷⁶

The first sentence demonstrates a really important omission. Conventionally a space used for gathering, the agora was a mechanism for ostracising peasants, slaves, women and children. If Tapscott, Ticoll and Lowy had cited fully from the 1910 11th edition of *The Encyclopædia Britannica*, they would have begun ‘The agora of ancient Greece was originally[, in primitive times,] the assembly of the ancient people, convoked by the king or one of his nobles’.⁷⁷ Presumably the primitivism implied here is that of ostracising individuals through architectural-geometric arrangements that literalise social structures. Tapscott, Ticoll and Lowy hence omit that these spaces were used for ‘primitive’ ostracism, and omit the strict limitations on freedom of speech within the *agora*.

It is vital to note that it is not just history that is being instrumentalised in these handbooks. Clouds are also being instrumentalised, as ecological referential bases for computational systems.

⁷⁶ Don Tapscott, David Ticoll and Alex Lowy, ‘Introduction: Value Innovation through Business Webs’, *Digital Capital* (London: Nicholas Brealey Publishing, 2000), pp.1–36, p.31. Cf. *Encyclopedia Britannica*, 11th ed., s.v. “agora.”

⁷⁷ *The Encyclopædia Britannica*, 11th Edn., vol. 1, s.v. “agora” (New York: Encyclopædia Britannica, 1910).

This signficatory practice of instrumentalising clouds has seeped into works that supposedly critique the cloud computing industry. Tung-Hui Hu claims to have mapped the pre-history of ‘the cloud’.⁷⁸ Hu refers to the physical networks and data centres housed in Cold War nuclear bunkers in order to critique the one-way structures of necropolitical power emblematised by the computing industries as a medium of the social.⁷⁹ Yet I find Hu’s work problematic because, throughout, he continues to use the adjective “cloudlike” without critiquing the implications of this terminology. Similarly, James Gleick, in referring to the cloud metaphor, used by Google to describe their management of information, suggests that the ‘physical aspect [of Google’s Cloud] could not be less cloudlike’.⁸⁰ What does this word “cloudlike” mean in these instances? What ideas underpin this adjective?

From this perspective, the thorny adjectival thicket implied by “the cloudlike” marks an intersection between methods of critiquing and methods of marketising clouds, as a lexical site of the cloud concept. The “cloudlike” is operative in what Paul N. Edwards has criticised as the ‘infrastructure’ moment of computing, where cloud affinities are used to market the sociotechnical system of the digital cloud.⁸¹ The “cloudlike” is

⁷⁸ Tung-Hui Hu, *A Prehistory of The Cloud* (London: MIT Press, 2015).

⁷⁹ Hu, *A Prehistory of The Cloud* (2015). Cf. Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. by Alan Sheridan (New York: Vintage Books, 1995); Gilles Deleuze, ‘Postscript on the Societies of Control’, *October*, 59 (winter 1992), 3–7; Achille Mbembe, ‘Necropolitics’, *Public Culture*, 15.1 (2003), 11–40.

⁸⁰ James Gleick, ‘After the Flood’, *The Information: A History, A Theory, A Flood* (London: Fourth Estate, 2011), pp.373–397.

⁸¹ Paul N. Edwards, ‘Infrastructure and Modernity: Force, Time and Social Organization in the History of Sociotechnical Systems’, *Modernity and*

used to sell the illusion of freedom identified by Slavoj Žižek, and to advertise the idea of deterritorialised drift, identified by Daniel van der Velden, Vinca Kruk, and Alysse Kushinski of Metahaven.⁸² The “cloudlike” also runs through vapid debates around who coined the digital lexis of ‘the cloud’, which evade the larger question of what this digital lexis is doing.⁸³ In the context of the cloud computing industries, the “cloudlike” could be taken as a diagnostic for the entire technological mediation of the ecology.

The paradigmatic function of clouds is hence rooted through technology. Not only are clouds mediated through the economic logic of computational media. Clouds are, as such, transformed into a technology through which the present is mediated. In referring to computational media and the computing industries as “cloud computing”, we hence mediate an industrial phenomenon through a naturalised metaphor. “Clouds” hence sit alongside visual metaphors for computational and Internet systems, such as “networks/nets”, “lattices”, “corals” and “webs”. Clouds are distinct from these other visual examples, however, due to the fact that the metaphor of “cloud computing” seems to borrow qualities from an ecological phenomenon in order to visualise digital phenomena. Cloud computing performs a paradoxical function in the paradigm of the cloud concept.

Technology, ed. by Thomas J. Misa, Philip Brey and Andrew Feenberg (London: MIT Press, 2003), pp.185-227.

⁸² Slavoj Žižek, ‘Freedom in the Cloud’, *In These Times*, 13 August 2013, <http://inthesetimes.com/article/15451/freedom_in_the_cloud>, [accessed 26 July 2016]; Daniel van der Velden, Vinca Kruk, and Alysse Kushinski, ‘Captives of the Cloud, Part III: All Tomorrow’s Clouds’, *e-flux* 50 (December 2013), <<http://www.e-flux.com/journal/captives-of-the-cloud-part-iii-all-tomorrows-clouds/>> [accessed 26 July 2016].

⁸³ Fechar Janela, ‘Who Coined ‘Cloud Computing’?’, *Technology Review.es*, 30th October (MIT Press, 2015), <http://www.technologyreview.com.br/printer_friendly_article.aspx?id=38987> [accessed 26 July 2016].

Clouds appear at once new and revolutionary, yet in doing so, ideas about clouds are concretised into a metaphorical tenor; concepts of clouds are re-disclosed as a-historical and “natural”. It is this relationship, or this concept-appearing-as-natural, that is the focus of the thesis, not simply the “use” of a metaphor for computing.

This goes beyond the digital cloud. In the previous example, the artists HeHe were drawn to use clouds—in this case industrial pollutant clouds—to mediate an environmentalist critique. Though this to some extent displaces the contemporary production of clouds by industry, it arguably recapitulates the paradigmatic totality of the mediation of the present through clouds. In all of the above examples, from artworks, cloud appreciation societies, economic handbooks for the computing industries, to media theorists, the present is being re-rooted through clouds. This performs the function of concretising the conceptual dynamics of clouds. The self-referentiality of the cloud concept is arguably its predominant feature, over and above any decreed qualities of clouds. The cloud concept has become instated over time, as an accretion. However, this accretion has the appearance of newness—or so the tendency for artists and social media users to gravitate towards this *#clouds* trend would suggest.

In Dick Hebdige’s seminal work on subcultural style, he writes against this production of paradigmatic cultural forms, arguing that during the 1960s ‘the most mundane objects[...] like [Jean Genet’s] tub of vaseline, take on a symbolic dimension, becoming a form of stigmata, tokens of a

self-imposed exile'.⁸⁴ For Hebdige, objects that were once talisman for anti-normative subcultures become absorbed and incorporated into the dominant cultural mythology.⁸⁵ Anti-normative concepts, radical forms, phenomena and ideas, transition toward 'trending' as a contemporary ideology. Following Hebdige, I will now counterpoint contemporary artists, media theorists and some aspects of eco-criticism, with preceding works from 1960s artists. In part, this will expose the cloud concept as a complex inheritance of an emergent 1960s concept of clouds as anti-normative, radical or environmentalist forms. Principally, this will expose the axiomatic function of the "cloudlike," as an adjective that catalogues a concept of "gathering", "elastic" and "signifying" ecological form.



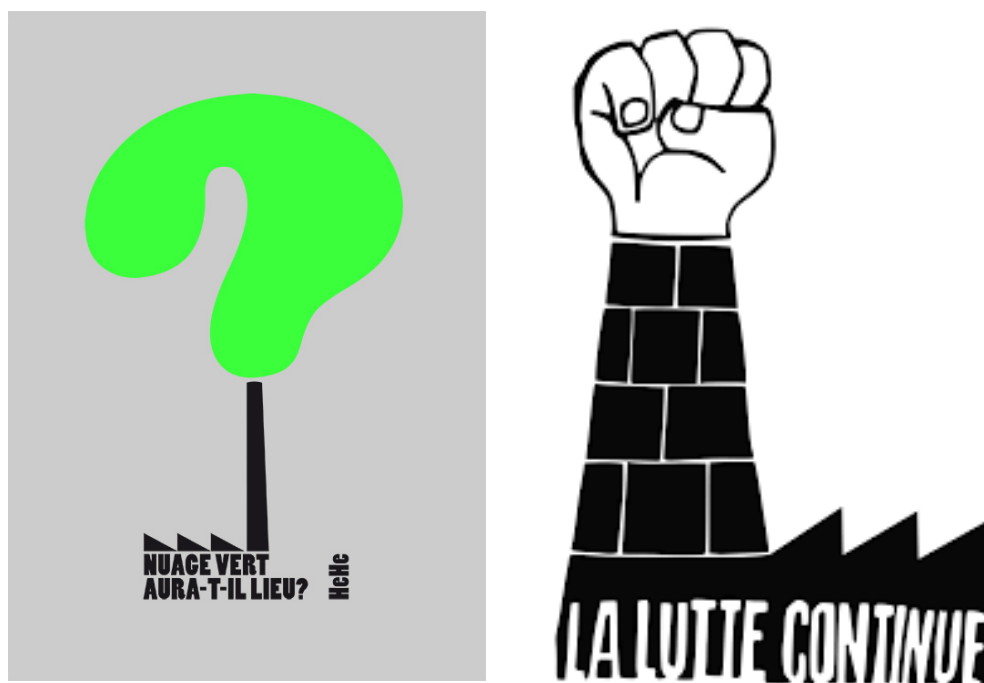
⁸⁴ Dick Hebdige, 'Introduction: Subculture and Style', *Subculture: The Meaning of Style*, New Accents, ed. by Terence Hawkes (London: Routledge, 1988), pp.1–4, p.2; Cf. Jean Genet, *The Thief's Journal*, trans. by Bernard Frechtman (Harmondsworth: Penguin, 1967).

⁸⁵ Hebdige, 'Two Forms of Incorporation', *Subculture*, pp.92–99, p.94.

Figure 5: Andy Warhol, *Silver Balloons* (1966).

1960s CLOUD, or Silver Kool-Aid Acid Gas Becomings

The aforementioned art collective HeHe intermittently produce silkscreen prints and posters as part of their activism, often referencing their work to the familiar posters produced by an anonymous artist for May 1968 riots of Paris (see figures 6–7).



Figures 6–7: HeHe, *Nuage Vert aura-t-il lieu*, silkscreen print, 66 x 46 cm (2009) and anon. *La lutte continue*, activist poster (1968).

Doing so, they identify their politics with the militant radicalism of the Polish March 1968, May '68, the armed struggles in Latin America, and the anti-war and Black Power movements in the US, amongst others.⁸⁶ HeHe

⁸⁶ Christopher Connery and Hortense J. Spillers (eds), *Boundary 2* 36.1, Special Issue: The Sixties and the World Event (spring 2009).

supplement a green cloud for the left-wing fist of solidarity in the well-known poster, alluding to an idea of clouds as socialist forms of uprising. Fredric Jameson and Marianne DeKoven state the importance of remaining critical of sentimentalising the 1960s, suggesting we should avoid overstating the revolutionary significance of those years.⁸⁷ That said, HeHe's work begins to suggest that the 1960s could be a really useful optic for configuring what it means to be "cloudlike." HeHe's work is a provocation to situate the 1960s as an optic for understanding the way ideas of clouds transition from revolutionary significance to engineered forms that embed ecological consciousness within the logic of the economy.

Several other contemporary artists reference the 1960s in their deployment of "cloudlike" forms. Martin Creed, in the work *Half the Air in a Given Space* (1998), gathers balloons in a gallery space and allows visitors to wander through the static of the room (see figure 8). Creed uses pink balloons, white balloons, multi-coloured balloons and silver balloons, alluding in this latter version of the artwork to Andy Warhol's *Silver Clouds* (1966). Creed's *Work No.360: Half the Air in a Given Space* was recently on display at The Henry Gallery in Washington (2015), where it was described as a 'formless sea of spheres'.⁸⁸ This description is striking since Creed's work lacks any of the provocative qualities of the 'formless' that exist within Warhol's work. In *Silver Clouds*, Warhol used new technology developed by Billy Kluver to make silver, heat-sealed, helium-filled

⁸⁷ Marianne DeKoven, *Utopia Limited: The Sixties and the Emergence of the Postmodern*, Post-Contemporary Interventions, ed. by Stanley Fish and Fredric Jameson (London: Duke University Press, 2004).

⁸⁸ Martin Creed, *Half the Air in a Given Space*, white balloons, multiple parts, each balloon 12 in / 30.5 cm diameter; overall dimensions variable, 1998.

balloons that were allowed to drift around a gallery space. Jennifer Doyle and David Getsy offer a means to theorise the criticality of these clouds/balloons. Doyle and Getsy suggest that Warhol's artistic gestures carry critical force because they exemplify what they term 'queer formalism', as works that exhibit anti-normative usages of cultural forms, or what they term the redeployment of objects 'against their use as cultural capital'.⁸⁹ These queer formalist gestures insist, Doyle and Getsy suggest, upon cultural forms as blocks of meaning, shaped by one formal logic and redeployed in another.⁹⁰ When Warhol made his work Kluver's technology was yet to be commodified through the cultural production of party balloons. Warhol's materials have thus yet to attain their cultural capital, and hence when Warhol reassigns the balloons as 'clouds', what he really does is open the signification of clouds. He queers the forms of clouds, not the forms of balloons. The signification of the balloons is reciprocally opened through the ruptured signification of clouds.

When Instagram users tag non-cloud images under *#clouds* they arguably employ what Hebdige describes as the repositioning, recontextualising and subversion of forms. Yet rather than mediating queer formalist gestures, *#clouds* mediates the ideological and commodity form of clouds.⁹¹ More explicitly, the designer Marc Jacobs made reference to Warhol's clouds when he filled the ceiling of his Autumn/Winter 2014

⁸⁹ Jennifer Doyle and David Getsy, 'Queer Formalism: Jennifer Doyle and David Getsy in Conversation', *Art Journal*, 72.4 (2014), 58–71 (p.59).

⁹⁰ Doyle and Getsy, 'Queer Formalism', p.60.

⁹¹ Hebdige, 'Style and Intentional Communication', *Subculture*, pp.100-102, p.102.

show with silver clouds.⁹² This displaces the radicality of Warhol's artistic gesture. Similarly, the artist Berndnaut Smilde secured a place in the Saatchi Gallery and Saatchi auctions by producing 'indoor clouds', and now collaborates to photograph his clouds with the likes of Karl Lagerfeld, Donatella Versace, Alber Elbaz and Dolce and Gabbana.⁹³ When Warhol queered clouds and brought these subverted forms into the gallery space he explored what could disrupt the formal conventions of art, and implicitly asked how this rupture might be absorbed into the logic of art institutions. In these contemporary examples the axiomatic gesture of the "cloudlike" has lost any sense of institutional interruption. The intervention now confirms the logic of the gallery, and signals the entrapment of clouds within the institutions of art and the creative industries.



⁹² John Lewis winter collection, December 2015; Dolly Jones, 'Marc Jacobs', *Vogue*, 13 Feb 2014, <<http://www.vogue.co.uk/fashion/autumn-winter-2014/ready-to-wear/marc-jacobs>> [accessed 28 June 2017].

⁹³ Laura Brown, 'The In Cloud', *Harper's Bazaar*, 7 Aug 2013. <<http://www.harpersbazaar.com/fashion/photography/g2887/berndnaut-smilde-designer-shoot-0913/?slide=2>> [accessed 28 Jun 2017].

Figure 8: Martin Creed, *Half the air in a given space* (1998).

Hal Foster has duly noted this enclosure of abject form within the institutional conventions of art. Commenting upon the complex political stakes of what he variously calls a contemporary aesthetic of formlessness, the anti-aesthetic, formless forms, or the *informe*, Foster writes:

[...] when process opens up the work of art radically, it sometimes runs the risk of formlessness. For Bataille “the formless” was an operation pledged to undo any form that had become fixed, in particular fixed as meaning (which he tended to regard as ipso facto idealist). If detached from its transgression of the formal, the *informe* can become a meaning, even a value, in its own right, which Bataille would have rejected outright. The same is true of “the anti-aesthetic”; if removed from its agon with the aesthetic, it can become a protocol, even a principle, of its own. Such might be the risk, too, of painting that is asked to visualize the image flows of mass media that far exceed it, and of sculpture that is expected to be anti-formal as a matter of course.⁹⁴

For Foster, formlessness is a fixed concept that encodes postmodern aesthetic sensibility. In this respect, formlessness lacks the critical qualities of intervening into any ideological state of stasis, and is instead shifted to the status of immobile norm, protocol, code or principle. Bataille employed

⁹⁴ Hal Foster, ‘In Praise of Actuality’, *Bad New Days: Art, Criticism, Emergency* (London: Verso, 2015), pp.127–140, pp.136–137. Cf. Georges Bataille, ‘Formless’, *Visions of Excess: Selected Writings 1927-1939*, trans. by Allan Stoekl, Carl R. Lovitt, Donald M. Leslie, ed. by Allan Stoekl, *Theory and History of Literature*, 14 (Minneapolis: University of Minnesota Press, 1985), p.31.

the term ‘*l’informe*’ as an anti-systematic movement of thinking. This anti-systematic operation of formlessness was equally celebrated in Yve-Alain Bois and Rosalind Krauss’s 1996 publication *Formless: A User’s Guide*, the catalogue to an exhibition in the Pompidou Centre, Paris, yet it has since been opened to critique by Foster, and likewise by theorists James Elkins and Harper Montgomery, David Joselit, Richard Flood, Laura Hoptman and Massimiliano Gioni.⁹⁵ In their co-authored introduction entitled ‘The Use Value of “Formless”’, Bois and Krauss celebrate the formless as an act of sabotage that is put to work in the avant-garde and modernist practice of disappointing aesthetic expectations and laying to waste ‘the academic world and the spirit of the system’ of exchangeability in art.⁹⁶ They revisit Bataille’s analysis of Manet’s refusal of ideological codes in *Olympia*, and suggest that the formless is the quality of an action that does not produce an art object with typical exchangeable value within the given ideological codes of art. A formless action is instead ‘an *operation* (which is to say, neither a theme, nor a substance, nor a concept)’.⁹⁷ This act of tearing is, for Foster, a principle of art in its institutional content, and hence the tear no longer intervenes into any social programme.

Through this critique of the formless it becomes possible to identify the affirmative quality of Creed’s work when compared with the

⁹⁵ James Elkins and Harper Montgomery (eds), *Beyond the Aesthetic and the Anti-Aesthetic* (University Park, Penn: Penn State University Press, 2013); David Joselit, *After Art* (Princeton, NJ: Princeton University Press, 2012); Richard Flood, Laura Hoptman, Massimiliano Gioni, *Unmonumental: The Object in the 21st Century*, ed. by Trevor Smith (New York: New Museum, 2007).

⁹⁶ Yve-Alain Bois and Rosalind Krauss, ‘The Use Value of “Formless”’, *Formless: A User’s Guide* (New York: Zone Books, 1997 [1996]), pp.13–42, p.14.

⁹⁷ Bois and Krauss, ‘The Use Value of “Formless”’.

subversiveness of Warhol's *Silver Clouds*. Creed is referencing a critical aesthetic operation that no longer intervenes into the ideological codes of art, but has rather become the ideological code of art. The *operation* of bringing clouds indoors has become systemically *operationalised*, and thus it has shed any of the political interventionist spirit of its anti-systematic aesthetic. On this basis, I want to propose that the queer, 'anti-aesthetic' qualities of clouds are part of the postmodern rubric of the cloud concept.⁹⁸ If the anti-aesthetic of clouds as queer or queering forms was an operation identifiable with avant-garde practice, then the 1960s saw the emergence of the ideological operationalisation of clouds as the horrifying fulfilment of this renunciation of order. Through the 1960s, the system learns to recuperate through the anti-systematic renunciation of its logic.

Broadening the bases of this suggestion, William E. Connolly has astutely suggested that 'it is now possible to draw a philosophy of becoming, the trajectory of political economy and appreciation of the fragility of things into close communication'.⁹⁹ Connolly's words ring true when reading the works of various writers employing the concepts central to a philosophy of becoming (rhizomatic, planes, deterritorialisation), which Luc Boltanski and Ève Chiapello diagnose as the managerial logic of late capitalism.¹⁰⁰

It is fascinating to relate this to the work of Franco Moretti and Dominique Peestre, who employ Moretti's method of quantitative formalism

⁹⁸ See the collection of works under the title: *The Anti-Aesthetic: Essays on Postmodern Culture*, ed. by Hal Foster (Port Townsend, Washington: Bay Press, 1983).

⁹⁹ William E. Connolly, 'Steps toward an Ecology of Late Capitalism', *Theory & Event*, 15.1 (2012), <doi:10.1353/tae.2012.0006>.

¹⁰⁰ Boltanski and Chiapello, *The New Spirit of Capitalism* (2005).

to undertake a frequency analysis of the content of the World Bank's yearly report between 1946-2012. Moretti and Pestre identify a metamorphosis in the linguistic codification of the Bank Report, drawing conclusions about the semantic evocations of these syntactic transmutations: between 1946 and 2012, a semantic 'atmosphere of factuality' drops away, giving way to gerunds ('ing' words) and progressive verb forms.¹⁰¹ Both grammatical conventions denote actions that are yet to be completed. As such, gerunds and progressive verbs denote a 'blurred, slightly amorphous temporality', as, Moretti and Pestre continue:

[...] the function of gerunds consists in leaving an action's completion undefined, thus depriving it of any definite contour. An infinitely expanding present emerges, where policies are always in progress, but also always only in progress. Many promises, and few facts[...] All change, and no future.¹⁰²

Pestre and Moretti expose the economic substrate of what I am presenting as an emergent 1960s logic of queer or radical cloud forms. The post-1950s era that Moretti and Pestre describe is marked by the linguistic shift from concrete to vapour, from noun to verb, from perfect past to continuous present. This era is thus marked by the shift from form to form-as-a-happening—from form to form as only-ever-forming. In line with Boltanski

¹⁰¹ Franco Moretti and Dominique Pestre, 'Bankspeak: The Language of World Bank Reports, 1946-2012', *Literary Lab: Pamphlet* (March 2015), 1–23 (p.4).

¹⁰² Moretti and Pestre, 'Bankspeak' (p.23).

and Chiapello, the transition from form to forming (from being to becoming) is symbolic of the perversion of artistic critique, which has been neutralised into an ever-wider ideological morality of capital.¹⁰³ As this framework extends, so too does the logic of becoming, and with that, the move form to forming.

Late capitalism puts the gerund into action. On this basis, I find it really provocative to discover the following passage in Tim Ingold's ostensibly eco-critical work:

[...] *the earth is 'earthing'*, continually growing and sprouting as a melange of material flows, practical activities, perceptive observations and personal stories, and its shape is woven from all of these

[...]

Nor are clouds objects. Each is rather an incoherent, vaporous tumescence that swells and is carried along in the currents of the medium. To observe the clouds is not to view the furniture of the sky but to catch a fleeting glimpse of *the sky-in-formation*, never the same from one moment to the next. [my emphases]¹⁰⁴

Ingold offers the ideology of forming as if this were an intervention into the sustaining ideologies of climate injustice. Doing so, he claims that clouds are not objects but a phenomenal feature of the 'earthing', the 'sky-in-formation'. This application of the gerund can be located in the contemporary discourse of the computing industries. Looking primarily at

¹⁰³ Boltanski and Chiapello, *The New Spirit of Capitalism* (2005).

¹⁰⁴ Tim Ingold, 'Part III: Earth and Sky', *Being Alive: Essays on Movement, Knowledge and Description* (Abingdon, UK: Routledge, 2011), pp.95–140, pp.114–117.

engineer and economist handbooks produced for prospective investors or systems designers of the cloud computing industry, the authors of these works often shift away from speaking in concrete terms whenever they attempt to define that industry as a new form of technology. For Borko Furht and Jinzy Zhu, in the *Handbook of Cloud Computing*, and Weinman, in *Clouconomics*, the computational networks of the computing industry is designated as enabling streamlined, on-demand, dynamically-scalable, automated, remote, low-labour cost, low-skills requirement systems.¹⁰⁵ In this operational definition, Weinman follows the terminology developed by Ramnath Chellappa in the 1997 paper at a meeting of the Institution for Operations Research and Management Sciences (INFORMS), where Chellappa theorises the cloud computing industry as an entirely economic phenomenon.¹⁰⁶ This definition was later formalised in the 2011 definition given by the National Institute of Standards and Technology (NIST), intended as a standardizing definition of the industry as a matter of social security:

¹⁰⁵ Borko Furht, ‘Cloud Computing Fundamentals’, pp.3–20, pp.8–9 and Jinzy Zhu, ‘Cloud Computing Technologies and Applications’, pp.21–46, pp.35–37, in *Handbook of Cloud Computing*, ed. by Borko Furht and Armando Escalante (London: Springer, 2010); Weinman, *Clouconomics* (2012).

¹⁰⁶ Ramnath Chellappa, ‘Intermediaries in Cloud-Computing: A New Computing Paradigm’, Institute for Operations Research and the Management Sciences (1997), <<http://meetings2.informs.org/Dallas97/TALKS/MD19.html/>> [accessed 28 June 2017]. See also Ramnath Chellappa and Alok Gupta, ‘Managing Computing Resources in Active Intranets’, *International Journal of Network Management*, 12 (2002), 117–128, <http://www.bus.emory.edu/ram/Papers/ijnm_cloudcomputing.pdf> [accessed 12 June 2016].

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud is composed of five essential characteristics, three service models, and four deployment models.¹⁰⁷

Rather than delivering on the promised ‘simple taxonomy’ of cloud services and their deployment, the industrial relations that they describe emerges in this definition as a sociotechnology of becoming.¹⁰⁸ The cloud computing industry is the ‘enabling’ of technology to create social patterns of provision and release, pooling and convenience. Elsewhere, Microsoft cloud engineers inform us that this industrial phenomenon is made up of ‘patterns’ and ‘practices’.¹⁰⁹ Morretti and Prestre’s critique of the gerunds of the World Bank Reports haunts this definition of the cloud computing industry, in the terminology of ‘comput-ing’ and ‘enabl-ing’. It is thus unsurprising to find the following words in an article in the *Huffington Post*, from Richie Etwaru:

¹⁰⁷ Peter Mell and Timothy Grance, *The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology*, NIST Special Publications, 800-145 (September 2011).

¹⁰⁸ Mell and Grance, *The NIST Definition of Cloud Computing*, p.1.

¹⁰⁹ Alex Homer, John Sharp, Larry Brader, Masashi Narumoto and Trent Swanson, *Cloud Design Patterns: Prescriptive Architecture Guidance for Cloud Applications* (Microsoft, 2014).

Business leaders interested in the future of enterprise technology should stop thinking of “the cloud” as a noun and start thinking about “clouding” as a verb.¹¹⁰

The industry of cloud computing is a technological architecture that is complicit in the ideologies of becoming, forming and earthing. The proposed shift from the concrete noun to the gerund ‘-ing’ form thus emphasises the centrality of the ideology of forming to the structures, systems and services that make up this service-oriented industry. The Amazon Elastic Cloud (EC2) encapsulates this shift, as it promises a constantly mutating and becoming form of computing services. The concept of clouds, that is being used to describe the cloud computing industry, thus entails the logic of labour forming whereby the industry of computing capabilises the exploitation of exceptions (leisure time, sleep time, the lives of subaltern workers) or excesses of work. The cloud concept is an emblematic open architecture of work and labour. The cloud concept, in its elasticity, is thus an emblem of this capitalist logic of forming, of the transmutation of signifying processes into an imposed constancy of change with no promise of a future.

Linked to this concept of clouds as open or elastic architectures is the related scientific philosophy of clouds as epistemological ruptures in thought or knowledge; or of clouds as metaphysical ruptures in the computational logic of modern meteorological science. In the reports of the

¹¹⁰ Richie Etwaru, ‘Enough of the Cloud Already, What is Next for Enterprise Technology?’ *Huffington Post* (31 May 2014) <[http://www.huffingtonpost.com/richie-etwaru/enough-of-the-cloud-
alrea_b_5056275.html](http://www.huffingtonpost.com/richie-etwaru/enough-of-the-cloud-
alrea_b_5056275.html), Accessed 15.07.16> [accessed 28 June 2017].

IPCC—considered the lead scientific output of climate studies—the authors reflect upon the difficulty that clouds present for the numerical parametisation of Climate Modelling Systems.¹¹¹ The computer power needed to model the climate down to the time-space scale of a cloud would make climate modelling inefficient, and so invariably clouds are instead rendered parametrically through a law of averages that processes probable variations in cloud cover within a given cube of the atmosphere (Balkin’s work aptly depicts this imagined cuboid of parametised cloud). Modern meteorology has thus, since at least as long as the IPCC reports, been advancing through marking and remarking upon the ‘epistemological rupture’ of clouds, in keeping with Gaston Bachelard’s theory of scientific advancement.¹¹² Bachelard viewed science as proceeding through historical tears and tearing, and while he speaks on much broader terms, the way clouds exist for contemporary meteorologists (largely computer scientists) exemplifies this scientific procedure. The cloud is hence an object-as-tear within the sciences, and the parametisation of clouds arguably smooths over what is constituted as an ostracised and pathologised form of clouds.

Clouds are pathologised on an on-going basis through a renewed view of clouds as scientifically objective epistemological ruptures. I want to bring this into the rubric of the gerund or the ‘-ing’, as examined above, in order to suggest that the formula of clouds as a tear is better thought of as an

¹¹¹ Gregory Flato and Jochem Marotzke et al. ‘Executive Summary’, *Evaluation of Climate Models*, WG1 AR5, IPCC Report, *Climate Change 2014*, pp.743-6: ‘The simulation of clouds in climate models remains challenging. There is *very high confidence* that uncertainties in cloud processes explain much of the spread in modelled climate sensitivity’, p.743.

¹¹² Gaston Bachelard, *The New Scientific Spirit*, trans. by Arthur Goldhammer (Boston: Beacon Press, 1984).

ideology of clouds as tearing. This formulation of clouds as tearing is sustained by literature and theory that takes clouds as ecological metaphors for inconstancy, or tears of unknowing. This is evident in the working concept of clouds at play in Ingold's work, cited above, where he writes that clouds are not objects, and where he deploys the gerund as philosophy of nature.¹¹³ Yet Ingold is not alone in this theorisation of clouds and not-becomings, and his ideas express a central tenet of clouds in cultural studies of climate, weather and the ecology, and across Ingold's field of so-called eco-philosophy. The different iterations of eco-philosophy, inclusive of the metaphysical formulations of the ecology within Speculative Realism, 'Thing Theory' or Object-Oriented-Ontology of Graham Harman et al., produce questionable titles such as Projit Bihari Mukharji's 'The "Cholera Cloud" in the Nineteenth-Century "British World": History of an Object-Without-an-Essence', where these fields are compounded into a study of clouds as 'lacuna', as "'extra-rational" objects'; and as 'constantly in motion', with 'no stable essential identity', 'repeatedly and always refigured and internally heterogeneous'.¹¹⁴ Counterintuitively, this anti-essentialising analysis of clouds, which seeks to attend to the heterogeneity of form, merely serves to essentialise the (anti-)logic of clouds as tearing, serving

¹¹³ Tim Ingold, 'Part III: Earth and Sky', pp.114–117.

¹¹⁴ Projit Bihari Mukharji, 'The "Cholera Cloud" in the Nineteenth-Century "British World": History of an Object-Without-an-Essence', *Bulletin of the History of Medicine*, 86.3 (fall 2012), 303-332 (p.307). Cf. Graham Harman, 'On Vicarious Causation', *Collapse Volume II: Speculative Realism*, ed. by Robin Mackay (New York: Sequence Press, 2007), pp.187–221.

also to necessitate the method of ‘transcendental empiricism’, borrowed from Gilles Deleuze via Levi Bryant, which Mukharji adopts.¹¹⁵

The ideology of clouds as tearing thus extends far beyond the bounds of contemporary meteorology, into and through the eco-critical literary treatment of the science of meteorology. Richard Hamblyn’s *The Invention of Clouds: How an amateur meteorologist forged the language of the skies* (2002) is a particularly provocative example, as he offers a cultural history of science without ever seriously interrogating the cultural politics of those scientific constructs.¹¹⁶ This is especially evident in the romanticism of clouds as unknowable or as immaterial forms. In *The Cloud Book: How to Understand the Skies* (2008), and in *Extraordinary Skies: Skies of the unexpected from the beautiful to the bizarre* (2009), Hamblyn poeticises the science of clouds as tearing forms by translating meteorological tenets of clouds into a contemporary cultural discourse, leaning this upon the literary canon: ‘altocumulus lenticularis’ clouds are classified both as the product of orographic lifting (C_M4 in the World Meteorological Society’s *International Cloud Atlas*) and as the inspiration for Shakespeare’s scene between Young Hamlet and Polonius (where Hamlet spots ‘a camel... a weasel... a whale’, in *Hamlet*, Act III, scene ii).¹¹⁷ In all of his works, Hamblyn resists

¹¹⁵ Projit Bihari Mukharji’s ‘The “Cholera Cloud” in the Nineteenth-Century “British World”’, p.307. Cf. Levi Bryant, ‘Empiricism and the Search for the Conditions of Real Experience,’ *Difference and Givenness: Deleuze’s Transcendental Empiricism and the Ontology of Immanence* (Evanston, Ill: Northwestern University Press, 2008), pp.15-48, p.43.

¹¹⁶ Richard Hamblyn, *The Invention of Clouds: How an Amateur Meteorologist Forged the Language of the Skies* (London: Picador, 2001).

¹¹⁷ Richard Hamblyn, *The Cloud Book: How to Understand the Skies* (Newton Abbot: David & Charles, 2008); *Extraordinary Skies: Skies of the unexpected from the beautiful to the bizarre* (Newton Abbot: David & Charles, 2009).

rigorously interrogating culturally constituted ideas of clouds as tearing forms, and guarantees a wide readership for his work by continuing to employ the discourse of the “ephemeral” or the “fleeting” that has come to define clouds. Such works remain committed to a working concept of clouds as tearing forms.

In the 1960s, this particular idea of clouds as tearing forms and as anti-epistemological objects emerged as an idea of clouds as ruptures or tears, specifically within environmentalist aesthetic critiques of the political economy. On 1st August 1975, Dutch artist and hippy activist Fons Elders led a co-operative experimental landscape project called Zeevang in North-Holland, publishing the photographic documentation and notes under the title *Luchte, water, vuur, aard: experimenteel landschapsproject “Zeevang”=Air, Water, Fire, Earth: Experimental Landscape Project “Zeevang”* (1977).¹¹⁸ His fellow artist Johan Claassen contributed to the landscape project by sitting in a DIY wooden box, measuring 1.5m³, set upon ten-foot stilts, containing a chair, table and a mirror, allowing the occupier to study a mirror-image of the clouds passing above the box. Claassen called his work the *cloud/mirrorbox*. Claassen was not the only attendant artist using clouds as part of the Zeevang aesthetic. Jan van Munster set up two cameras, a day-camera and a night-camera, both equipped with 28mm film, pointed at the sky. Munster made photos during July, August and September, at 12-noon and at midnight. While Claassen

¹¹⁸ Fons Elders, Meino Zeillemaker, Ed van der Elsken, Pieter Boersma, Henk Op ten Berg, *Luchte, water, vuur, aard: experimenteel landschapsproject “Zeevang”= Air, Water, Fire, Earth: Experimental Landscape Project “Zeevang”* (Bentveld, Aerdenhout: Landschoff, cop., 1977). All subsequent references to the Zeevang collective cite this work.

was journaling clouds from inside *cloud/mirrorbox* and while Munster was taking photos of the passing clouds, Pieter Engels surprised the collective by arranging for a small fleet of aeroplanes to fly over the site, dragging an advertisement banner that read ‘*Wolk*,’ the Dutch for ‘cloud’ (see figure 9).

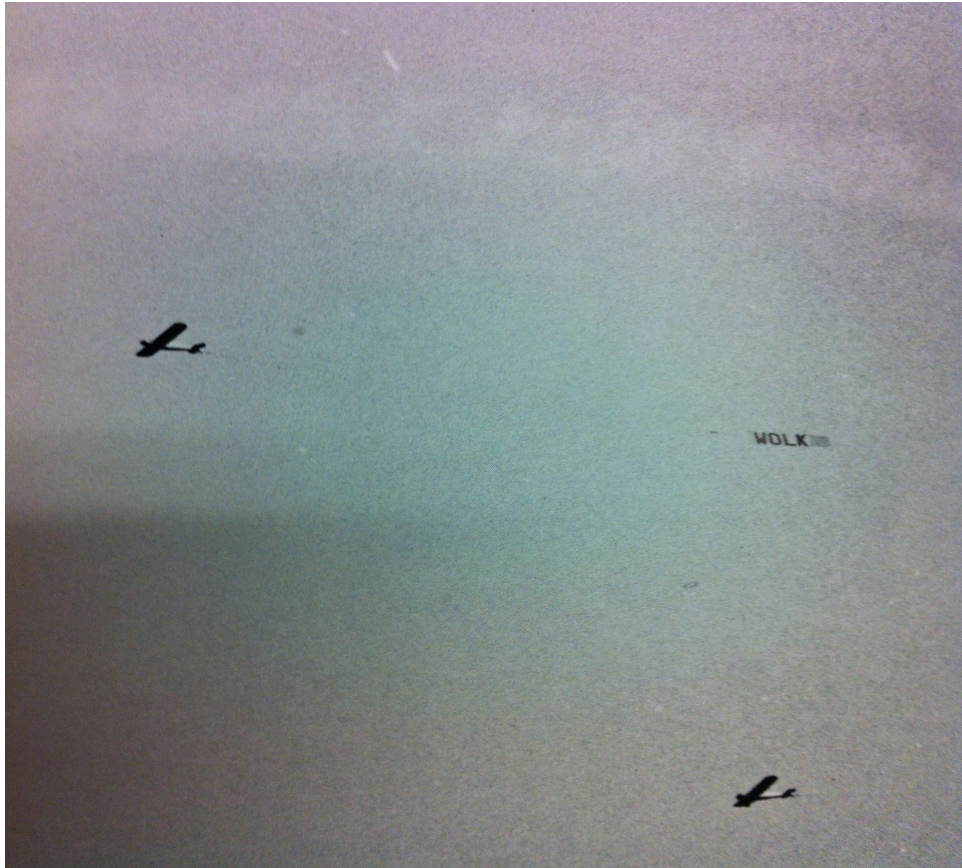


Figure 9: Pieter Engels, [*Wolke*,] Zeevang Collective (1975).

Engels’ work is striking because the word *Wolk*, though standing in as a sign for a cloud, cannot perform as a full semantic supplement. In the Zeevang collective documentation, the sky event is described as follows:

To clear up every misunderstanding about Zen and the idea ‘cloud’, Pieter Engels has put the relationship of the triad reality, language and thinking in the proper sequence, viz. thinking, language and reality. No clouds without

the idea ‘cloud’; no idea ‘cloud’ without the word ‘cloud’, but sometimes the word ‘cloud’ without a ‘real’ cloud.¹¹⁹

The *Wolk* thus makes reference to its own function as a linguistic signifier disassociated from its ‘real’ referent, symptomatic of 1960s strategies of linguistic freeplay. The artwork makes reference to Benjamin’s meditations around the linguistic chains of signification catalysed by the word *Wolke*, particularly in the way that this dispersal or tearing of meaning, set up by the word for cloud, was then celebrated in the 1986 essay from Werner Hamacher, ‘The Word *Wolke*—If It Is One’.¹²⁰ Hamacher follows Benjamin and Engels in using the signifier ‘clouds’ to affirm the post-structuralist *jouissance* of linguistic freeplay, establishing the difference between the word ‘Wolke’ and the heterogeneity of clouds. ‘Cloud’ (to follow Hamacher’s employment of the singular form) is ‘never *one* and never assumes a lasting form’.¹²¹ Binarising this heterogeneity of the reality of clouds and the singular, static form of the referent, thus allows Hamacher to maintain that language is without security.¹²² Pointing at the solidity of the word *Wolke* is taken as an aesthetic and theoretical intervention into the assumption that that stable form can be tethered to the sky. This frees language of its relation to reality, in much the manner Engels sought to do with his own *Wolk* artwork at Zeevang.

¹¹⁹ Elders et al., *Luchte, water, vuur, aard*, p.43.

¹²⁰ Werner Hamacher, ‘The Word *Wolke*—If It Is One’, *Studies in 20th Century Literature*, 11.1, Special Issue on Walter Benjamin (Fall 1986), 133–162.

¹²¹ Hamacher, ‘The Word *Wolke*—If It Is One’ (p.133).

¹²² Hamacher, ‘The Word *Wolke*—If It Is One’ (p.153).

Fredric Jameson contextualises these postmodern efforts to tear language, through radical, political movements that sought to break from the dominant cultural or political logic, suggesting that in 1967 signs radically broke from referents, followed by the further rupture of signifiers from the signified.¹²³ This destabilisation of meaning was sought, as Jameson has highlighted, by anti-capitalist political movements and theorists alike in the 1960s and into the early 1970s. Movements that sought to purify the sign of its normative and hegemonic role did so by tearing it from its established semantics. The *Wolk* of Engels' work embodies this aesthetic strategy. It is a word that has been torn from its conventional ecological referent through being made to perform as an inadequate supplement.

And it is with this in mind that I want to relate this strategy of tearing to the Zeevang art collective's more general agenda, as an environmentalist, anti-capitalist group. In an opening statement of the collective's aims, given in the 1977 book, they write:

For most people today nature is an economic and esthetic experience and an accidental one.

This book shows a new integration of art and philosophy as a consequence of the idea that nature is not private property and cannot be used arbitrarily, as the sciences, art and philosophy for the most part are using it today.

Nature belongs to herself: she includes us.¹²⁴

¹²³ Jameson, 'Periodizing the 60s', p.200.

¹²⁴ Elders et al., *Luchte, water, vuur, aard*, n.p.

The Zeevang collective aimed to disassociate their perception of the natural environment from ‘economic and esthetic’ experience. The journal entry that Claassen made whilst sitting in *cloud/mirrorbox* reads as follows:

Saturday, September 20th, 1975

[...]

I will let this discussion between my eye and my intellect dissolve into a chemical solution in the milky substance right in front of me. The light wall begins to dissolve itself in moving fields of milky and watery colours, which people call ‘clouds’. On the door of this black box stands ‘cloudbox’.¹²⁵

It might be reasonable to speculate that Claassen was on LSD in the cloudbox. The style of perceiving the world from this disassociated perspective of the ‘black box’ has remarkable overlaps with LSD trip narratives. Indeed, on reading this passage from Claassen, I cannot help but think of Anaïs Nin’s famous LSD journal entry, where Nin attempts to describe her psychotropic drug-induced disassociation from the material world in the following way: ‘doors, walls, and windows were liquefying. All rigidities disappeared’.¹²⁶

Fons Elders was instrumental in instigating disassociation as the general aesthetic of Zeevang’s rural art collective. Four years prior to gathering on a farm in the North-Netherlands, Elders conducted the so-called ‘Lost

¹²⁵ Claassen in Elders et al., *Luchte, water, vuur, aard*, p.39.

¹²⁶ ‘Anaïs Nin, ‘The Diary of Anaïs Nin, 1947–1955’, in *Sisters of the Extreme: Women Writing on the Drug Experience* ed. by Cynthia Palmer and Michael Horowitz (Rochester, Vermont: Park Street Press, 2000), pp.151-182, p.166.

Interview’ with Michel Foucault, before moderating the 1971 televised Chomsky–Foucault debate as an episode of the Dutch initiative, the International Philosophers Project.¹²⁷ Foucault’s anti-humanist critique of biopolitical mechanisms of power runs through the Zeevang agenda, expressed as a desire to de-naturalise the idea that nature is ‘private property’. They seek to tear nature from this culturally produced concept of the ecology as an object or form of the political economy.

This deployment of clouds can be further contextualised through the contemporaneous work of Jean-François Lyotard (1924–1998). In 1971, Lyotard published *Discourse, Figure*, his *thèse de doctorat d’État*.¹²⁸ Here, Lyotard theorises the nonconceptuality of works of art.¹²⁹ Then in the later work *Peregrinations: Law, Form, Event*, published in 1988, Lyotard offers what Gayle M. Ormiston has aptly termed a ‘propaedeutic’ of *Discourse, Figure*.¹³⁰ Providing a key to his *Discourse, Figure*, Lyotard associates clouds with the nonconceptuality of art, stating he is in pursuit of ‘new artistic clouds and new clouds of thought’.¹³¹ In the ‘Clouds’ chapter, he writes:

¹²⁷ Fons Elders, Michel Foucault and Noam Chomsky, ‘Chomsky–Foucault debate [The Lost Interview]’, 1971. [uncovered by Lionel Claris in 2014]. Available online <<https://www.youtube.com/watch?v=qzoOhhh4aJg>> [accessed 20 July 2016].

¹²⁸ John Mowitt, ‘Introduction: The Gold-Bug’, in Jean-François Lyotard, *Discourse, Figure*, trans. by Antony Hudek and Mary Lydon (London: University of Minnesota Press, 2011), pp.xi-xxiii, p.xii.

¹²⁹ Jean-François Lyotard, *Discourse, Figure* (2011).

¹³⁰ Gayle M. Ormiston, ‘Review: ‘Jean-François Lyotard, *Peregrinations: Law, Form, Event*’’, *The Journal of Aesthetics and Art Criticism*, 48.1 (winter 1990), 88-90 (p.88).

¹³¹ Jean-François Lyotard, ‘Gaps’, *Peregrinations: Law, Form, Event* (New York: Columbia University Press, 1988), pp.28-44, p.43.

Thoughts are not registered by areas, except of human commodity. Thoughts are clouds. The periphery of thoughts is as immeasurable as the fractal lines of Benoit Mandelbrot. Thoughts are pushed and pulled at variable speeds. They are deep, although core and skin are of the same grain. Thoughts never stop changing their location one with the other.¹³²

Lyotard is seeking to naturalise thought in a manner that will bypass the problematic procedures of essentialism and universalism so central to structuralist and high modernist movements. Clouds mediate this critical move. The assertion ‘Thoughts are clouds’, followed by Mandelbrot’s fractal theory of clouds as ‘immeasurable’, naturalises Lyotard’s aesthetic theory of clouds as ‘changing’ forms.

In this manner, the emergent aesthetic of clouds in the late twentieth century capitalised upon the perception of these ecological phenomena as constantly changing, in an effort to tear through the idea of form as constant. This theory of form was associated with rationalising, dominant ideologies of structuralist schools of thought. At the Languages of Criticism and the Sciences of Man conference at the Johns Hopkins University in Baltimore, which took place on October 18–21, 1966, Derrida described early efforts at post-structuralism and deconstruction as ‘destructive discourses’.¹³³ He continued to suggest that these discourses seek to disrupt

¹³² Lyotard, ‘Clouds’, *Peregrinations*, pp.1-15, p.5.

¹³³ Jacques Derrida, ‘Structure, Sign and Play in the Discourse of the Human Sciences’, *The Languages of Criticism and the Sciences of Man: The Structuralist Controversy*, ed. by Richard Macksey and Eugenio Donato (London: The Johns Hopkins University Press, 1972), pp.247–272, pp.250. For analysis of the significance of this seminar event, see Nicholas Birns, ‘The System Cannot Withstand Close Scrutiny: 1966, The Hopkins

‘the form, the logic, and the implicit postulations’ of structuralism, yet such interventions and strategies can easily be absorbed back into the normative codes.¹³⁴ He retorts:

The opposition is part of the system, along with the reduction. And what I am saying here about the sign can be extended to all the concepts and all the sentences of metaphysics, in particular to the discourse on “structure.”¹³⁵

For Derrida, post-structuralist, radicalising movements were always overshadowed with the capacity to reciprocally produce structure. The implications of this insight have been aptly highlighted by Seb Franklin, who theorises the relation between ‘form’ and ‘formlessness’, critiquing how ‘*that which is disavowed as formless is also that which makes form possible*’.¹³⁶ In line with his astute suggestion that capital accumulation and dispossession is at base a process of forming that makes use of the formless, or even, a process of forming that makes use of a process of tearing, I want to relate Franklin’s argument to contemporary theorisations of semiocapitalism. Where Hal Foster offered a means to see the emergent aesthetics of clouds transitioning into a contemporary working concept of clouds as forming, the theory of semiocapitalism offers a contemporary

Conference, and the Anomalous Rise of Theory’, *Modern Language Quarterly*, 75.3 (September 2014), 327–354 (pp.328-329).

¹³⁴ Derrida, ‘Structure, Sign and Play’ (pp.250).

¹³⁵ Derrida, ‘Structure, Sign and Play’ (pp.250–251).

¹³⁶ Seb Franklin, ‘The Contexts of Form’, *World Picture* 11 (Summer 2016), <http://www.worldpicturejournal.com/WP_11/Franklin_11.html> [accessed 22 June 2016].

optic for picturing the rupture, break or tear as a working concept of clouds as tearing.

The term ‘semiocapitalism’ is attributable to Left-thinker Franco ‘Bifo’ Berardi (b.1949), who has attempted to reveal that the action of tearing or rupture no longer intervenes into the dominant logic of the political economy, but has instead become the dominant economic logic through which the social is ordered.¹³⁷ In Berardi’s theory of semiocapitalism, the de-regulation of the market following the economic crisis led to the effective linguistic freeplay of virtual economic signifiers. This mechanism of disassociation is fundamental both to the economic lexis of neoliberal markets and to the business model of cloud computing as a global industrial phenomenon and network of social relations. Sean Cubitt in particular, highlights that semiocapitalism not only instates symbols as the primary mode of cultural and economic production and trade; Cubitt additionally argues that semiocapitalism harnesses desires for connection, community and education.¹³⁸ The industry of cloud computing is a business model where these harnessed desires are compounded with this mechanism of disassociation. As Cubitt remarks, the ‘transactional costs of electronic data transfers in cloud services’ exemplify the semiocapitalist ‘dissociation of consumption from environmental impact’, while the industry of cloud computing harnesses the desire for social consumption through the rhetoric of ‘resource pooling’.¹³⁹ The working concept of clouds thus capitalises upon the ecological forms in order to use them to model post-structuralist

¹³⁷ Sean Cubitt, ‘Decolonising Ecomedia’, *Cultural Politics*, 10.3 (2014), 275–86.

¹³⁸ Cubitt, ‘Decolonising Ecomedia’ (2014).

¹³⁹ Cubitt, ‘Decolonising Ecomedia’ (2014).

ideologies of tearing, ripping, rupture or break. Doing so lays a moral ground for capital. The realities of material waste and human exploitation are predicated on the dissociation or tearing of the symbolic from the material.

The working concept of clouds is hence a complex inter-relation of tearing and forming. These conceptual counterparts are made inseparable through clouds. As such, clouds are axiomatic of the co-dependence of tears and forms. The concept of clouds perpetuates the ideology of forming in a manner that makes every-thing seem process; in a state of modification; elastic; dynamic and changing. The mediation of the ideology of tearing through clouds builds upon this notion of perpetuity yet does so in a manner that harnesses its allusions to immateriality, in order to put forth an idea of clouds symbolically un-tethered to reality.

If the cloud concept mediates the ideologies of cloud computing as an industrial form, then what was it about the conceptuality of clouds in the 1960s that suggested these ecological phenomena to artists and technocrats alike, as ideal forms for mediating human desires for connection, or for mediating the otherwise terrifying anti-metaphysical, revolutionary ideal that everything is changing, nothing is stable and all being is becoming?

To answer this question, I now want to turn to some contemporary examples of artists who are using clouds to suggest a sense of community, before reflecting upon the trajectory of this thinking from the 1960s. I will focus upon Palo Alto, the region where Silicon Valley is home to pioneers of the cloud computing industry, in order to formulate the working cloud

concept as a sociotechnology that was formalised in experiments with drugs, art and software design.

In the works written about in *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (2015), edited by Heather Davis and Etienne Turpin, contemporary artist Tomás Saraceno, humanities researcher Sasha Engelman and social scientist Bronislaw Szerszynski, document their work on a project called ‘Becoming Solar’.¹⁴⁰ This work offers participants the opportunity to commune in ‘shifting assemblies’ called cloud cities—‘cumulo-cities, cirrus-cities, stratocumulo-cities’—which they argue will activate an ‘aerosolar society’ challenging the ‘existing, politically demarcated volumes partitioning the atmosphere’.¹⁴¹ This association of clouds with ideals of communality runs through Engelman’s other work, where she suggests that the ‘poetics of air’ can be politically motivated to make artworks that are both affective and political in form, where people can gather together in a ‘collective sensing of the atmosphere’.¹⁴² The suggestion seems to be, as in Szerszynski’s own writings about eco-art, that clouds are eco-active forms or spaces where we

¹⁴⁰ Tomás Saraceno, Sasha Engelman and Bronislaw Szerszynski, ‘Becoming Aerosolar: From Solar Sculptures to Cloud Cities’, *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, ed. by Heather Davis and Etienne Turpin (London: Open Humanities Press, 2015), pp.57–62.

¹⁴¹ Saraceno, Engelman and Szerszynski, ‘Becoming Aerosolar’, p.62.

¹⁴² Sasha Engelman, ‘Toward a Poetics of Air: Sequencing and Surfacing of Breath’, *Transactions of the British Institute of British Geographers* 40 (2015) 430–444 (p.430).

can commune and gather together to recognise our responsibility to the environment.¹⁴³

Yet this concept of clouds is the dominant conceptual framework running through the economist and engineer handbooks of the cloud computing industries. This industry looks to enmesh humans “into clouds,” questioning the knowledge that we are separate from the skies. We encounter our computer screens and enter the cloud as a “user.” As “users” of the cloud, the actions and interactions of human beings become ordered into particular forms, through largely involuntary subjection to the infrastructure of the cloud computing industry.¹⁴⁴ While Gleick and Hu independently attribute this operation of socialisation to the specific use of cloud metaphors by technology corporations, Franklin looks more broadly at the cloud as a medium of the social; in keeping with Fredric Jameson’s suggestion that the social reality of late capitalism structures human beings into biocapital, Franklin assesses the cloud of cloud computing as a sociotechnology.¹⁴⁵ For Franklin, this cultural logic of the cloud not only entails the organisation of human beings into certain social arrangements. He also suggests that the cloud metaphor works by suspending the sense of materiality, as emblems of what Franklin has termed the ‘ideology of immateriality’.¹⁴⁶ This idea is also evident in the work by Saraceno,

¹⁴³ Bronislaw Szerszynski, ‘Reading and Writing the Weather: Climate Technics and the Moment of Responsibility’, *Theory, Culture and Society*, 27.2–3 (2010), 9–30.

¹⁴⁴ Hu, *A Prehistory of The Cloud* (2015).

¹⁴⁵ Seb Franklin, ‘Cloud Control, or The Network as Medium’, *Cultural Politics*, 8.3 (2012). See also Fredric Jameson, *Postmodernism, or The Cultural Logic of Late Capitalism* (London: Verso, 1991); Seb Franklin, *Control: Digitality as a Cultural Logic* (London: MIT Press, 2015).

¹⁴⁶ Franklin, ‘Cloud Control’.

Engelman and Szerszynski. Clouds are made to serve as emblems of formlessness; promoting the illusion of an online commons, as if we can exist together in the ‘immaterial’ realms of social media and other forms of cloud-based interactions. Digitality employs a concept of clouds in order to suspend the sense of the materiality of its networks, making a virtual hole in the knowledge we have of the actuality of bunkers, wires, cables and fibre optics—concentrations of labour that are signified by the bunkers that house this global industry, the exploitation of those working to make computational networks appear seamless, and the inevitable sovereign operations of power that these formulations entail.

These critical assessments must be run alongside those of communications theorist John Durham Peters, who has recently argued that ‘[Media] are our infrastructures of being, the habitats and materials through which we act and are’.¹⁴⁷ In this vein, Peters argues that media brings us into being. Media is a system of social engagement that calls the individual into being, existing in accordance with media-based social norms. As Ronald E. Day makes clear, computational media calls us into being as ‘users’.¹⁴⁸ As Seb Franklin has argued, alongside the likes of Maurizio Lazzarato, sociotechnology digitality fashions populations into displaced workers or active “users,” for whom the illusion of co-existence allows for the sustained practices of ‘immaterial’ labour that digitality equally

¹⁴⁷ John Durham Peters, ‘Understanding Media’, *The Marvelous Clouds: Toward a Philosophy of Elemental Media* (London: University of Chicago Press, 2015), pp.13–52, p.15.

¹⁴⁸ Ronald E. Day, ‘Social Computing and the Indexing of the Whole’, *Indexing It All: The Subject In the Age of Documentation, Information, and Data* (London: MIT Press, 2014), pp.59–88, p.84.

affords.¹⁴⁹ Hu builds upon this argument by looking at exploited labourers who work to sustain the illusion that the cloud is seamless; these formless forms of labour anonymise human beings into non-existence by the normativizing bias of digitality's interpellations.¹⁵⁰

Let me be clear then, that communing, assembling or gathering in clouds is an ideological formulation of these ecological phenomena that commits one's thinking to the frameworks of computational media, both as a mechanism of identity construction and as a polluting industry. Moreover, this technology is identity-constitutive only insofar as humans are both positively produced and negative construed through the term 'user'.¹⁵¹ At its most trivial, an individual who pointedly avoids using tools like Google, Facebook, LinkedIn, Instagram and Twitter, or who avoids dumping their data in cloud-based repositories, resists their interpellation as a 'user' of the cloud. The cycle of trends for deleting or de-activating Facebook reveals both the pull of this interpellation as a mechanism of identity constitution and the mechanism of non-existence that comes into play when one steps out of the terms set by digitality. Cloud-based computational media employ

¹⁴⁹ Franklin, *Control* (2015). Maurizio Lazzarato, 'Immaterial Labor', *Radical Thought in Italy: A Potential Politics*, ed. by Paolo Virno and Michael Hardt, NED - New edition ed., vol. 7 (University of Minnesota Press, 1996), pp.133–148.

¹⁵⁰ Hu, *A Prehistory of The Cloud* (2015).

¹⁵¹ For critical views on how networks positively constitute identity, see Manuel Castells, *The Power of Identity: The Information Age: Economy, Society, and Culture*, vol. 2, 2nd edn (Oxford: Wiley-Blackwell, 2010): 'Communal Heavens: Identity and Meaning in the Network Society', pp.5–70. For the inadvertent confirmation of the positive constitution of identity through networked relations, see Bruno Latour, 'On Actor-Network Theory: A Few Clarifications Plus More Than a Few Complications', *Soziale Welt*, 47 (1996), 369–381; Stuart Kauffman, *At Home in the Universe: The Search for Laws of Self-Organisation and Complexity* (Oxford: Oxford University Press, 1995).

clouds as mechanisms for producing the “human.” If we exist in the terms of the cloud, we socially exist. In the cloud, we exist as a Timeline. In the cloud, we exist in our Followers. In the cloud, we exist as a packet of data housed behind a cloud widget on the Apple iCloud Website.

However, beyond the triviality of existing or not existing in accordance with the norms that define what happens in the cloud, Franklin, Hu and others reveal that we are all implicitly called into these pervasive sociotechnological structures. These structures can call humans into non-existence. In this respect, it is useful to remember the work of cultural theorist Stuart Hall, particularly his open affiliation with the work and writings of anthropologist Claude Lévi-Strauss. What Franklin and Jameson term a ‘cultural logic’, and Durham Peters provocatively terms an ‘infrastructure of being’, Hall would call a ‘logic of arrangement’.¹⁵² Logic, Infrastructure, Cultural, Structural; the conflation of terms makes transparent the extent to which computational communalism structures people into included and excluded roles, operating as binary mechanism of being and non-being.¹⁵³

I think we can ground this association of clouds with notions of being and non-being through looking at artists who use clouds to open a collective, aesthetic experience. In 1966, the artist Diter Rot (a pseudonym for Dieter Roth, b.1930-1998) began sending sketches and notes to the poet Emmett Williams (1925-2007), before later instructing Williams to

¹⁵² Stuart Hall, ‘The Rediscovery of ‘Ideology’: Return of the Repressed in Media Studies’, in *Cultural Theory and Popular Culture: A Reader*, ed. by John Storey (Essex: Pearson, 2006), pp.111–141, p.140; Stuart Hall, ‘Cultural Studies: Two Paradigms’, *Media, Culture and Society*, 2.1 (1980), 57–72 (p.65) <doi:10.1177/016344378000200106>

¹⁵³ Day, ‘Social Computing and the Indexing of the Whole’, p.84.

photocopy the doodles for publication in 1968.¹⁵⁴ The DIY aesthetic of the finished work follows Rot's meticulous instructions, to Williams, to 'keep all accidental holes, smudges, dirt, tears, on the films[...] throw the films on the printing plate quickly and carelessly and develop and print'.¹⁵⁵ This DIY aesthetic discloses the process of the book's production, and serves the overall activist agenda that comes through in Rot's annotations. Rot writes:

169. my pictures – all the stuff i have
 seen — ,
 let them fight for me,¹⁵⁶

Rot uses clouds to reach out to a community, as a human form of communication, in the face of the emerging detached sociality of postmodern hyper-individualism. Clouds service the sociality of the work. They work across the detachment of the work, to extend the process of the work to the reader.

Rot's aesthetic overlaps with various 1960s conceptual works from Fluxus artists Yoko Ono (b.1933) and Geoffrey Hendricks (b.1931). In Yoko Ono's *Painting to See the Skies* (1961), she gives the following set of instructions:

PAINTING TO SEE THE SKIES
 Drill two holes into a canvas.
 Hang it where you can see the sky.
 (Change the place of the hanging.
 Try both the front and the rear windows,
 to see if the skies are different.)
 1961 Summer¹⁵⁷

¹⁵⁴ Diter Rot, *246 little clouds* (New York: Something Else Press, 1968).

¹⁵⁵ Rot, *246 little clouds* (1968). Transcription my own.

¹⁵⁶ Rot, *246 little clouds* (1968).

¹⁵⁷ Yoko Ono, *Painting to See the Skies*, card, 1961.

The following year, Ono produced a set of instructions that inverted the logic of this work, entitled *Painting for the Skies* (1962):

PAINTING FOR THE SKIES
 Drill a hole in the sky.
 Cut out a paper the same size
 as the hole.
 Burn the paper.
 The sky should be pure blue.
 1962 summer¹⁵⁸

Ono allows participants to enter into a community with one another through the outlined actions. This community is formed through the action of tearing two holes in a canvas and looking at the skies through these holes. This strategy was echoed in Geoffrey Hendricks' work *Erase everything, Paint sky on everything* (1965).¹⁵⁹ A series of cloud-based works by Hendricks invite participants into his artistic process of painting or printing clouds onto domestic objects: boots, pillowcases, t-shirts, underwear, a VW Beetle and even a gun, in *Sky Gun* (1968). In the work *Sky Boots* (c.1980), Hendricks painted an old pair of boots that he found in a barn, using acrylic blue and white, covering the boots in clouds. Hendricks said of his work that it represented a 'density[...] a certain kind of unified poetic way', elaborating that the boots are 'an embodiment of the person', and that they include himself 'as a person' too.¹⁶⁰ Kristine Stiles has noted that the work recalls

¹⁵⁸ Yoko Ono, 'Painting For the Skies', *Art and Artists*, 1.5, ed. by Mario Amaya (London: Hansom Books, 1966).

¹⁵⁹ Geoffrey Hendricks, *Erase everything, Paint sky on everything*, Winter Event (dramatic), Construction, Year-Long Event, and Two Year Piece, 1964–65 [typed 1966].

¹⁶⁰ Geoffrey Hendricks, 'Interview with Lars Movin', *Day Into Night* (Odense Denmark: Kunsthallen Brandts Klædefabrik, 1993), p.56, p.58.

Vincent van Gogh (1853-1890) and his many oil works depicting shoes, painted during his time in Paris, and later during his time in Arles (1888-1890).¹⁶¹ For Jameson, van Gogh's boots emblematised pre-industrial forms of labour, and hence Hendricks' *Sky Boots* annul the models of work that the boots make implicit.¹⁶² With clouds, Hendricks suspends the sense of the boots. Where Van Gogh's shoes once bore the heavy impression of human labour, these boot-simulacra shift the sense of the self as worker.

This brings into play the relationship between subject-forming and the tearing or disassociation implicit in self-transcendence. Hu, in *A Prehistory of The Cloud*, notes the geographical and ideological proximity of 1960s Stanford Research Institute engineers and avant-garde artists in Palo Alto.¹⁶³ However, what Hu overlooks is that these drug cultures of the 1960s are not incidentally nor geographically linked to the pioneering ideals of sociality that were drawn from New Communalism, imbued into cold war technocracy, and arguably realised in the cloud computing industry.¹⁶⁴ Palo Alto was not simply a place where technocrats and hippy movements co-existed, but a place where the LSD-culture included both Information Technology researchers and engineers. This fully instates clouds as techno-

Cf. Kristine Stiles, 'Anomany, Sky, Sex and Psi in Fluxus', *Critical Mass Happenings, Fluxus, Performance, Intermedia and Rutgers University 1958–1972*, ed. by Geoffrey Hendricks (New Brunswick, New Jersey: Rutgers University Press, 2003), pp.60–88, p.66.

¹⁶¹ Stiles, 'Anomany, Sky, Sex and Psi in Fluxus', p.66. *Sky Boots* also recalls René Magritte, *The Future of Statues*, Plaster and paint, 1937, where Magritte used oils to cover a plaster reproduction of the death mask of Napoleon with blue sky and white clouds.

¹⁶² Jameson, *Postmodernism* (1991).

¹⁶³ Hu, *A Prehistory of The Cloud* (2015).

¹⁶⁴ Hua Hsu, 'How the Metaphor of "The Cloud" Changed Our Attitude Toward the Internet', *The New Yorker*, 10 November 2015, <<http://www.newyorker.com/books/page-turner/how-the-metaphor-of-the-cloud-changed-our-attitude-toward-the-internet>> [accessed 26 June 2016].

hippy emblems; models of drug-induced communion—or as emblems of the psychoactive resonance sought with others through drugs and through distributed ‘virtual’ networks.

It is difficult to overlook the informal links between the use of the cloud icon in computing circles and the continued use of cloud icons, symbols and metaphors in hippy culture. In *From Counterculture to Cyberculture* (2006), Fred Turner gives a thorough account of emergence of network entrepreneurialism and Information Technology in the 1980s, referring the ideological roots and concepts of this global movement back to ‘local, Bay area stories of LSD and countercultural transformation’.¹⁶⁵ Turner gives a detailed account of Stewart Brand’s role, both as a member of drug culture, and as an early pioneer of the overlap between of cybernetic theories and drug culture. Brand’s *Whole Earth Catalog* (est.1968 in San Francisco) exemplified this social promise of technology, bringing together cybernetic theories and software reviews, meditations on future technology and ethical debates of environmental issues.¹⁶⁶ In a revealing predecessor to the *Whole Earth Catalog*, Brand employed systems principles and cybernetic theories to organise ‘Trips Festivals’, devised in 1965 as a continuation of the ‘acid tests’, before being monetised by Bill Graham.¹⁶⁷ These acid gatherings were built as ‘an environment, a happening, a

¹⁶⁵ Fred Turner, ‘Virtuality and Community on the WELL’, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (London: University of Chicago Press, 2006), pp.141–174, p.163.

¹⁶⁶ Stewart Brand (ed.), *Whole Earth Catalog* (1968-1998). See also: Stewart Brand (ed.), *CoEvolution Quarterly* (1974-1984). The *Whole Earth Review* (est. 1985) notably turns direction, with the first issue on ‘Computer as Poison’ (January 1985).

¹⁶⁷ Turner, ‘Stewart Brand Meets the Cybernetic Counterculture’, *From Counterculture to Cyberculture*, pp.41–68, pp.65–67.

laboratory’, with ideals of permeable boundaries, de-hierarchised relations and nomadic structures, and sought on the whole to make the transcendental and the immanent dialectically navigable for participants, through supporting acid trips into and out of one’s own mind.¹⁶⁸ Brand developed ideals of transcending one’s own mind, as part of a community, whilst embedded in this bohemian culture. He and his peers used the psychoactive drugs LSD, mescaline, psilocybin mushrooms, and amphetamines to attempt to reach a virtual and projected vision of pre-social sociality.

These drug movements were at large in Palo Alto in San Francisco through the mid–late 1960s, in the region that is now home to Silicon Valley and global cloud-based social media site Facebook, cloud virtualisation software and services company VMWare, cloud content management and storage provider Box.net, Internet giant and digital industrial pioneers Google, mobile communications company Skype, PayPal and Survey Monkey, amongst others.¹⁶⁹ Shunning hierarchy in favour of a sense of ‘anarchic togetherness’, Brand’s countercultural yet technophilial ideas echoed the happenings of Allan Kaprow by giving a sense of ‘delicious, embodied’ communion.¹⁷⁰ These happenings represented the colonisation of the Native American peyote cactus, conventionally used in religious ceremonies, which Arthur Heffer at the University of Leipzig isolated as the

¹⁶⁸ Turner, ‘Stewart Brand Meets the Cybernetic Counterculture’, p.67.

¹⁶⁹ n.a., ‘20 Tech Companies with Roots in Palo Alto’, *Lifewithfive*, 2 January 2015 <<http://www.lifewithfive.com/20-tech-companies-with-roots-in-palo-alto/>> [accessed 11 June 2017].

¹⁷⁰ Turner, ‘Stewart Brand Meets the Cybernetic Counterculture’, p.67.

crystal he named ‘mescal’.¹⁷¹ Palo Alto hippies coupled these mind-altering drugs, appropriated from Native American religious practice, with Hindu teaching in the forms of yoga practice, meditation and cannabis smoking, which, as Paul Oliver notes, was brought from India by Allen Ginsberg and others, who helped found Hindu religious centres in New York City and San Francisco, Haight-Ashbury area.¹⁷²

These appropriated practices were active components in forming a sense of community in Palo Alto and further afield. For example, Brand was an active, if ‘restrained, reflective’ member, of Ken Kesey’s group of Merry Pranksters.¹⁷³ In a passage from the chapter ‘Cloud’, in Tom Wolfe’s *The Electric Kool-Aid Acid Test* (1968), Wolfe documents an acid-fuelled journey to see The Beatles at Cow Palace, a venue outside San Francisco, when the Merry Pranksters take a highly concentrated, barely-visible form of LSD they call ‘acid gas’.¹⁷⁴ Wolfe describes how the bus, the Pranksters, and everything outside the window ‘flow’ to the rhythm of the Beatles, playing in the Day-Glo school bus used by the Merry Pranksters. A road sign captures this confluence of self and outside world:

—and then in *that* very moment, they all, the all in one, the one brain flow,
see the mouldering sign silhouetted against the sky above the building:

¹⁷¹ Mike Jay, ‘From Apothecary to Laboratory’, *High Society: Mind-Altering Drugs in History and Culture* (London: Thames and Hudson, 2010), pp.48–107, pp.101–104.

¹⁷² Paul Oliver, ‘Drugs, enlightenment and Hinduism’, *Hinduism and the 1960s: The Rise of a Counter-Culture* (London: Bloomsbury Academic, 2014), pp.69–80, pp.75–79.

¹⁷³ Tom Wolfe, ‘Black Shiny FBI Shoes’, *The Electric Kool-Aid Acid Test* (London: Weidenfeld and Nicolson, 1969), pp.3–17, p.13.

¹⁷⁴ Wolfe, ‘Cloud’, *The Electric Kool-Aid Acid Test* (1969), pp.198–213, p.201.

CLOUD

Suddenly it seems like the Pranksters could draw the whole universe into .
 . . the movie . . .¹⁷⁵

Presumably ‘CLOUD’ appears in an advertisement, but the structure of Wolfe’s book also makes it possible that this is an acid-skewed reading of ‘Cow Palace’. On account of these psychoactive effects of LSD, people at drug culture gatherings in the San Francisco Bay area were known colloquially as “heads”, as they are throughout Wolfe’s book. Reflecting on his own time in controlled experiments with mescaline, in California in 1953, Aldous Huxley acknowledges the links between schizophrenia and the effects of psychoactive hallucinogens, writing that the ‘universal and ever-present urge to self-transcendence’ came together with ‘chemical vacations from intolerable selfhood and repulsive surroundings’.¹⁷⁶ Through the concept of clouds, the computing industry idealises vacations from self and material surroundings. In yet another entry from Claassen, in *cloudbox*, he writes:

Saturday night, November 6th, 1976

All forms tonight are moonforms.

¹⁷⁵ Wolfe, ‘Cloud’, p.203.

¹⁷⁶ Aldous Huxley, *The Doors of Perception* (London: Chatto & Windus, 1954), p.51.

The cloudbox begins to exert an irresistible force on me. Each visit to this four-dimensional cube strengthens in me a feeling of moving space.

The deeper the silence grows in this black cage, the more intensely space expands. [...] The cloudbox becomes a YIN-YANG-box, tiny and immense, dark and light, earth and heaven, silent and yet full of sounds.¹⁷⁷

Claassen's lucid words sound like the imagined contemplation of what it feels like inside the 'input/output' of a black box computer. The pre-social reification of the cloud computing industry, as a virtual global village in the sky, masks over its inherent structures of material exclusion and abstraction. Because it is primarily a service, business or economic model, we struggle to find language to describe what it looks like or feels like inside an input/output system. It is difficult to speak about an open architecture. Hence, computing has made use of clouds, as a terminology already associated with disassociation from objective, material reality. Computing has made use of the communalism implied by clouds, or of the "trippy" association of clouds and a deeper, more spiritual social connection.

The concept that we hold about clouds is thus that they befit descriptions of what is difficult to describe. More specifically, we use clouds to describe a shift from structured sociality to unstructured community, or the tearing of normative social codes to break boundaries. The flipside of our concept of clouds is the idea of forming. Clouds give form to things, in a continuum with their qualities as tearing forms. There are similarities between this paradoxical function of clouds and Catherine Malabou's concept of flexibility, and the related formulation of plasticity,

¹⁷⁷ Claassen in Elders et al., *Luchte, water, vuur, aard*, p.41.

inherited from Hegel and developed into a critique of capital.¹⁷⁸ Malabou describes plasticity as the ‘interplay between form and itself’.¹⁷⁹ This posits capital as a procedure not of economic profit and gain but of the production of forms. For Malabou, capital contains form and itself within the related models of flexibility and plasticity. This parallels the role of tearing and forming, with regard to the social implications of our concept of clouds. We think of clouds as not only tearing normative codes but as forming spaces of social possibility, as pertaining to the promise of communality and communication. Clouds are hence flexible or plastic concepts that contain social forming and ostensibly radical tearing. Our concept about clouds is that they facilitate a chemical vacation from a given social reality, that, like an ‘acid gas’, can become catalytic to a shared chemical vacation from selfhood. In this sense, clouds carry an implicit virtualising function. Clouds imply the non-conceptual remainder of the making of concepts itself. Clouds imply the undoing of materiality, or the tearing of matter toward the forming of self-transcendence or the immaterial.

This remainder should be taken to imply an operation of exclusion, taking place through capitalist modes of social production. Even in the apparently radical association of clouds with drug trips, not everyone was on Ken Kesey’s Day-Glo bus, just as not everyone is welcome ‘in’ or ‘on’

¹⁷⁸ Catherine Malabou, *The Future of Hegel: Plasticity, Temporality and Dialectic*, trans. by Lisabeth During (London: Routledge, 2005); *Ontology of the Accident: An Essay on Destructive Plasticity*, trans. by Carolyn Shead (Cambridge: Polity, 2016); *What Should We Do with Our Brain?*, Perspectives in Continental Philosophy, trans. by Sebastian Rand (New York: Fordham University Press, 2008).

¹⁷⁹ Catherine Malabou and Noëlle Vahanian, ‘A Conversation with Catherine Malabou’, *Journal For Cultural And Religious Theory*, 9.1 (2008) 1–13 (p.4).

the cloud. However, the ideal of total community hangs on the overlooking the realities of the hierarchies of the community, the economics of drug abuse and the exclusivity of the group behind the Merry Prankster lifestyle, just as we must embrace the ideality of clouds as egalitarian forms if we are to embrace what the industry cloud computing is doing for society. Hence, Rot's *246 little clouds*, despite their punk, DIY, zine-aesthetic, to some extent pre-figure the more explicit sociality of the industry of cloud computing as a social structure of exclusion. Rot's *246 little clouds* are largely illegible; for readers, what the clouds essentially facilitate is an overheard, scrambled or encrypted closed loop of communication between Rot and his poet friend and editor Williams. Not everyone is welcome in these clouds and certainly not those without some prior knowledge of the aesthetic norms into which the book intervenes, permitting them playful appreciation for the irony of an illegible, amateurish book that takes clouds as its organising principle.

Chapter One: Gathering

Computational social interpellation takes place in symbolic fields, through sociocultural and technical dialectical algorithms that gather up, sublimate, and exclude and include persons and texts toward the formation of users and documents, information needs and information, and increasingly collocated data.¹⁸⁰

Ronald E. Day—*Indexing It All: The Subject in the Age of Documentation, Information, and Data* (2014)

The history of the Greek theatre must be understood as the history of bodies.¹⁸¹

David Wiles, *Greek Theatre Performance* (2000)

This chapter interrogates the working concept-being of clouds as spaces where people can gather together away from social law, looking to critique this formulation of gathering by unpacking the social and political history of clouds as paradigmatically nebulous rips in the social. The cloud concept is inflected with the valorisation of escapist practices as liberating vacations from the subject-structuring regulatory, stratifying and legislative orders of social form. Within the discursive history of the industrial phenomenon of cloud computing this is suggested by the peculiarly compatible techno-fantasy and critique of digital networks as Greek *agora*.¹⁸² Industry theorist

¹⁸⁰ Ronald E. Day, 'Social Computing and the Indexing of the Whole', p.84.

¹⁸¹ David Wiles, 'The Writer', *Greek Theatre Performance: An introduction* (Cambridge: Cambridge University Press, 2000), pp.165–178, p.171.

¹⁸² Tapscott, Ticoll and Lowy, 'Introduction: Value Innovation through Business Webs', p.31. Cf. *Encyclopedia Britannica*, 11th ed., s.v. "agora."

Weinman opens *Clouconomics* (2012) by meditating on the history of the coinage of ‘the cloud’, before continuing to relate a ‘human history’ of resource pooling.¹⁸³ Weinman looks to this “human” history to justify the models of ‘resource pooling’ that are capabilised by ‘clouds’. As a source for this “human” history, Weinman cites *Digital Capital* (2000), by Don Tapscott, David Ticoll and Alex Lowy.¹⁸⁴ These writers trace digital capital to the Greek ‘Agora’, defining that Greek word as follows:

Agora. The agora of ancient Greece was originally the assembly of the ancient people, convoked by the king or one of his nobles. The word then came to mean the place where assemblies gathered, and this place then evolved to become the city’s center for public and especially commercial intercourse. We apply the term to markets where buyers and sellers meet to freely negotiate and assign value to goods¹⁸⁵

The overall suggestion is that the industry of cloud computing is a space of open exchange, where buyers and sellers can gather to engage in the economic discourse of free market capitalism. In Ancient Greek city-states, the *agora* was a market place where a political elite of men could gather to freely exchange goods and engage in political discourse or dialogue. The word ἀγορά (*agora*) means ‘any assembly, esp. an Assembly of the People; the place of Assembly, used not only for public debating, elections, and

¹⁸³ Weinman, ‘A Cloudy Forecast’, p.2.

¹⁸⁴ Weinman, ‘Does the Cloud Matter?’, p.23.

¹⁸⁵ Tapscott, Ticoll and Lowy, ‘Introduction: Value Innovation through Business Webs’, pp.1-36, p.31. Cf. *Encyclopedia Britannica*, 11th ed., s.v. “agora.”

trials, but also for buying and selling, and all kinds of business'.¹⁸⁶ This style of thinking about the computer industries revisits the techno-fantast content of 1990s Internet hype, such as Howard Rheingold's *Virtual Community* (1993), which followed from works such as 'Electronic Democracy', featured in the *Whole Earth Review* (1991) and *Tools For Thought* (1985).¹⁸⁷ Rheingold proclaimed the potential of information networks to become truly democratic spaces for social gathering, comparing computational media to Greek *agora*.¹⁸⁸ Equally, Langdon Winner, writing in 1985 for the *Whole Earth Review*, described idealisms emerging in the rhetoric surrounding information networks, as a participatory space that might promise false 'prospects for participatory democracy[...] offering all the benefits of the ancient Greek city-state'.¹⁸⁹ Winner's contention points to the misplaced notions of citizenship and participation at work in the idea that computer networks are democratic spaces that can revolutionise the broader architectonics of society.

Yet, the techno-fantast qualification of a computer industry as Greek *agora* posits an oblique reading of this Greek social space, so as to subdue its exclusionary realities and bring to the fore archetypal merits of citizenship and communalism. Strikingly, the comparison of the cloud computing industry as a sociotechnological arrangement and the Greek

¹⁸⁶ Henry George Liddell and Robert Scott, *Greek-English Lexicon*, 8th edn (Oxford: Clarendon Press, 1897).

¹⁸⁷ Howard Rheingold, *Virtual Community: Homesteading on the Electronic Frontier*, Revised edn (Cambridge, Mass: MIT Press, 1993); 'Electronic Democracy', *Whole Earth Review*, 71 (1991), 4; *Tools for Thought* (New York: Simon and Schuster, 1985).

¹⁸⁸ Rheingold, *Virtual Community*, p.50, p.376.

¹⁸⁹ Langdon Winner, 'Mythinformation', *Whole Earth Review*, 44 (January 1985), 22-28 (p.23).

agora is not only anticipated by writers lauding the participatory potential of the Internet; the parallel between this sociotechnology and the Greek *agora* is reflected in the reactionary work of Kevin Robins and Frank Webster, in the article ‘Athens without slaves... or slaves without Athens? The Neurosis of Technology’.¹⁹⁰ Robins and Webster follow a Habermasian critique of the public sphere, critiquing the Internet-as-*agora* as a ‘virtual’ technology for exploitation.¹⁹¹ Hence the epithet for networks: ‘Athens without slaves... or slaves without Athens?’ This critique of digital networks makes recourse to Greek *agora*, yet only so as to highlight the violent histories that undergird the modes of freedom these spaces permitted.

It has been widely established in the field of Classics that exclusion and exploitation were foundational to the ostensibly democratic structures of the Greek city-state. Understanding the Greek city-state through a Marxist critique of class structures, G. E. M. de Ste. Croix, radicalised the field of Classics in 1981, arguing that Greek democracy was founded upon class struggles involving ‘the exploitation of unfree [sic] (especially slave) labour’.¹⁹² More recent work has developed this critique of class struggle into a reflection on the architectonics of violence in Greek culture.¹⁹³ Amy

¹⁹⁰ Kevin Robins and Frank Webster, ‘Athens without Slaves, or Slaves without Athens?: The Neurosis of Technology’, *Science as Culture*, 1.3 (London: Free Association Books, 1987), pp.7-53.

¹⁹¹ Jürgen Habermas, ‘Preliminary Demarcation of a Type of Bourgeois Public Sphere’, *The Structural Transformation of the Public Sphere: An Inquiry into A Category of Bourgeois Society*, trans. by Thomas Burger with Frederick Lawrence (Cambridge, Mass: MIT Press, 1991), pp.1–26.

¹⁹² G. E. M. de Ste. Croix, ‘Class, Exploitation and Class Struggle—Alternatives to class (status etc.)’, *The Class Struggle in the Ancient Greek World from the Archaic Age to the Arab Conquest* (Ithaca, New York: Cornell University Press, 1981), pp.81-97, p.94.

¹⁹³ Werner Riess and Garrett G. Fagan (eds), *The Topography of Violence in the Greco-Roman World* (Ann Arbor: University of Michigan Press, 2016).

Russell writes that '[the] equality of citizens within the *agora* rested on the exclusion or erasure of women, slaves, children, foreigners, and anyone else considered unworthy of political participation'.¹⁹⁴ In the case of women and slaves, the psychosocial, rather than literal, exclusion from democratic participation in the *agora* served to reinforce their violent exclusion from participation in the *polis*. Even under the most forgiving assessment of Susan I. Rotroff and Robert Lamberton, who suggest that women's concerns were vocalised in the *agora*, the contrasting cases of the exclusion of women give an overwhelming picture of violence against women.¹⁹⁵ While some women did occasionally trade in the *agora* and others fought for civil rights, women were generally in the marketplace working as slaves, or, in the 4th century, restricted to the 'women's *agora*' (*gynaikeia agora*), specialising in household goods. The *agora* was frequently used as a space for 'slave sales', dividing Greek culture into those who could trade and those whose lives were deemed tradable.¹⁹⁶ The Greek *agora* was surrounded by slaves being publicly and openly abused, whipped, hanged and threatened.¹⁹⁷ To exist on this margin was to be qualified as structurally disposable within Greek culture. The marginalised populations who existed beyond the Greek *agora* (or who were being abused, whipped, hanged or

¹⁹⁴ Amy Russell, 'The Definition of Political Space in the Forum Romanum', *The Politics of Public Space in Republic Rome* (Cambridge: Cambridge University Press, 2016), pp.43–76, p.51.

¹⁹⁵ Susan I. Rotroff and Robert D. Lamberton, 'Classical Women and Public Space', *Women in the Athenian Agora* (Athens: American School of Classical Studies at Athens, 2005), pp.9–11, p.10.

¹⁹⁶ William Linn Westermann, 'From the Persian Wars to Alexander: Slave Employment and Legal Aspects of Slavery', *The Slave System of Greek and Roman Antiquity*, *Memoirs of the American Philosophical Society*, vol. 40 (1955), pp.12–21, p.12.

¹⁹⁷ Peter Hunt, 'Violence Against Slaves in Classical Greece' in *The Topography of Violence*, pp.136-161.

threatened in propinquity to its boundary) existed on the peripheries of a space where Greek ‘men [were] structurally agents’, barred from political participation and denied access to the laws that might otherwise protect life.¹⁹⁸ Even if these ‘legal disabilities’, as suggested by Rotroff and Lamberton, did not extend to ‘property’, their extension to the body frames the Greek *agora* as an architectonic space for reproducing social relations of dispossession.¹⁹⁹ These social relations have at all times driven production, with marginal lives supporting the speculative praxis of market exchange and the accumulation of wealth.²⁰⁰

In the epigraph to this chapter, Ronald E. Day suggests that computational social interpellation takes place in a symbolic field. In the 1990s Internet hype already described, the Greek *agora* was being used as one such symbolic field, serving as symbolic referent for the cultural mechanisms of information exchange, of the ‘sociocultural and technical dialectical algorithms that gather up, sublimate, and exclude and include persons and texts toward the formation of users and documents’.²⁰¹ Greek architectonics symbolise the idealistic vision of computational media. As Robins and Webster highlight in ‘The Neurosis of Technology’, the most coherent alliance between the Greek *agora* and digital networks is the logic of lease and exchange, and the concurrent transmutation of life into

¹⁹⁸ Rosana Omitowoju, ‘The Crime that Dare not Speak its Name: Violence Against Women in the Athenian Courts’, in *The Topography of Violence*, pp.113–135. Cf. Rosana Omitowoju, *Rape and the Politics of Consent in Classical Athens* (Cambridge: Cambridge University Press, 2002), pp.121–22; Stephen Charles Todd, *The Shape of Athenian Law* (Oxford: Clarendon Press, 1993), pp.201–2.

¹⁹⁹ Rotroff and Lamberton, *Women in the Athenian Agora*, p.9.

²⁰⁰ Federici, ‘Introduction’, *Caliban and the Witch*, p.13; Tadiar, ‘Life-Times of Disposability within Global Neoliberalism’.

²⁰¹ Day, ‘Social Computing and the Indexing of the Whole’, p.84.

labour.²⁰² In more recent theoretical writing on the industry of cloud computing, these early 1990s views have been revisited and used to align clouds with the Greek *agora*, producing clouds as a symbolic structure for computational social interpellation denoted by the idea of digital gathering. Yet with the introduction of clouds, the reference no longer needs to be oblique. Rather, the history of the *agora* is occluded by an environmental façade. This ecological referent obfuscates the historical realities of slavery and ostracism, which underwrite any notion of free, open exchange associated with the *agora*. It veils the afterlife of slavery, discoverable in the various modes of dispossession undergirding global digital capital.

Compounded into the figure of clouds, digital networks and the Greek *agora* undergo a re-spatialisation that reconfigures their realities of violent exclusion, expulsion and ostracism. The gathering is no longer the literal coming-together of bodies in a space where other bodies are being beaten and whipped. Rather, now we are gathering in the skies, where all bodies are shifted to a virtual register. In ‘Cloud Computing and Grid Computing 360 Degrees Compared’, Ian Foster et al. compare cloud-based systems to grid-based systems by using spatial language; they describe clouds as an ‘open’ ‘large pool’ of resources, ‘built on top of many existing protocols including Web Services’.²⁰³ For these writers, a cloud network is a nebulous form that traverses the rigid gridwork of the Web. For writers

²⁰² Robins and Webster, ‘Athens without Slaves, or Slaves without Athens?’, pp. 7–53.

²⁰³ Ian Foster, Yong Zhao, Ioan Raicu and Shiyong Lu, ‘Cloud Computing and Grid Computing 360-Degree Compared’, *Institute of Electrical and Electronics Engineers Grid Computing Environments* (Grid Computing Environments (GCE) Workshop, 2008), n.p.

Christopher S. Yoo and Jean-François Blanchette this nebulous form marks the infrastructural ‘moment’ in computing, leading them to claim:

As infrastructure, then, the Cloud necessarily becomes the focus of a series of policy concerns that deal with issues of market regulation, fairness, universal access, reliability, criticality, [3] national security, sharing of limited resources, congestion, inter-network competition, national economic welfare, capacity planning, monopoly, and antitrust, among others.²⁰⁴

The word ‘focus’ is key here, and it marks a thematic of spatialisation linking the idea of clouds as an ‘open pool’ ‘built on top of many existing protocols’ and the idea of clouds as an infrastructural moment. The cloud is not a structure built on top of a structure. It is a focal point for structure itself—an axis of structure, where existing issues of regulation, action, security, welfare and competition are concentrated. This is further echoed by cloud-computing policy theorist William Lehr, who, in attempting to qualify ‘where’ the ‘internet cloud’ exists, bypasses any temptation to refer to clouds as independent structures, suggesting instead that clouds are ‘protocol *layers* in an Information Technology (IT)—*architecture* sense[...] industry/market *structure*, business *processes*, and regulatory *environment*

²⁰⁴ Christopher S. Yoo and Jean-François Blanchette, ‘Introduction: Computing’s Infrastructure Moment’, *Regulating the Cloud: Policy for Computing Infrastructure*, ed. by Christopher S. Yoo and Jean-François Blanchette (London: MIT Press, 2015), pp.1–20, pp.1–2.

[my emphasis]’.²⁰⁵ Clouds are being conceptualised here as compositions, not as original or independent forms—as the meeting of pre-existing industries, markets, businesses, protocols and regulations at a focal epicentre, at an assembly or gathering. As a symbolic reference for the gathering, the concept-being of clouds is more focus than form.

The symbolic figure of the cloud is a disruptive focal point of form. This quality of the conceptuality of clouds as ‘gatherings’ fascinates me, as it finds commonalities with the capacity to model clouds in the General Circulation Models (GCMs) used to simulate the climate.²⁰⁶ Though climate change is undeniable, simulating the climate to the degree of accuracy that would be needed in order to incorporate the full range of variables that determine the climate is a near practical impossibility. Concerning clouds, authors of the IPCC Report reflect that, modelling ‘all cloud-controlling factors’ is unforeseeable.²⁰⁷

Within this scientific way of conceptualising clouds, these ecological forms are figured as nebulous form traversing a more ordered grid-like structure. Clouds are the adversaries of the parametrical averaging that makes climate modelling possible. Fascinatingly, this extends beyond

²⁰⁵ William Lehr, ‘Reliability and the Internet Cloud’, *Regulating the Cloud*, pp.87–113, p.87.

²⁰⁶ Theodore L. Anderson, Andrew Ackerman, Dennis L. Hartmann, George A. Isaac, Stefan Kinne, Hirohiko Masunaga, Joel R. Norris, Ulrich Pöschl, K. Sebastian Schmidt, Anthony Slingo, and Yukari N. Takayabu, ‘Temporal and Spatial Variability of Clouds and Related Aerosols’, *Clouds in the Perturbed Climate System: Their Relationship to Energy Balance, Atmospheric Dynamics, and Precipitation*, ed. by Jost Heintzenberg and Robert J. Charlson (London: MIT Press, 2009), pp.127–147, p.141.

²⁰⁷ A. Pier Siebesma, Jean-Louis Brenguier, Christopher S. Bretherton, Wojciech W. Grabowski, Jost Heintzenberg, Bernd Kärcher, Katrin Lehmann, Jon C. Petch, Peter Sprichtinger, Bjorn Stevens, and Frank Stratmann, ‘Cloud-controlling Factors’, *Clouds in the Perturbed Climate System*, pp.269–290, p.269.

the computer sciences, suggesting a generalised tendency to spatialise clouds as a focal non- or anti-form within a grid-like mesh or net. In the art-architectural work by architectural firm Diller Scofidio + Renfro, made for Expo 2002, the architects constructed an intricate, architectural form over Lake Neuchâtel.²⁰⁸ This was then filled with vapour, and became a ‘cloud-pavilion’—obscuring the bridge and plunging participants into a blinding fog or mist. The work is reminiscent of the work of Fujiko Nakaya, who has been making fog or cloud sculptures since the 1970s, culminating in her *Fog Bridge* (2015), an installation piece that covered Pero’s Bridge on Bristol Harbourside in dense fog, as a celebration of the city’s year as European Green Capital.²⁰⁹ Vittoria di Palma, writing about Diller Scofidio’s architectural work, analyses the relationship of mutual dependence ‘between cloud and grid’.²¹⁰ As di Palma writes, the built cloud-form:

[...] could not be distilled to a mere question of structure, for the pavilion both exceeded and compromised its structural dimension, being composed of both structure and vapour, with that vapour veiling and hindering the apprehension of the structure.²¹¹

For di Palma, the cloud that exudes over the bridge exceeds the rectilinear struts and diagonal rods of the building on the lake. This pointedly echoes

²⁰⁸ Diller Scofidio + Renfro, *Blur Building*, rectilinear struts, diagonal rods, fog, Lake Neuchâtel, 2002.

²⁰⁹ Fujiko Nakaya, *Fog Bridge*, mixed media, Pero’s bridge, fog, the Arnolfini Centre of Contemporary Arts, 2015.

²¹⁰ Vittoria di Palma, ‘Blurs, Blots and Clouds: Architecture and the Dissolution of the Surface’, *AA Files*, 54 (summer 2006), 24–35 (p.28).

²¹¹ di Palma, ‘Blurs, Blots and Clouds’ (p.28).

Rosalind Krauss's landmark essay 'The /Cloud/', where Krauss seeks to emphasise the extravagance of clouds as environmental forms that exceed the terms of the aesthetic composition.²¹² Elsewhere, Krauss writes about Alfred Stieglitz's *Equivalents*, a series of photographs of clouds that Stieglitz produced between 1925–1934.²¹³ The critical reflection that Krauss produces about this series of photographs is as much an essay about clouds as it is about photography, as Krauss seeks to qualify clouds as forms that provoke 'an extraordinary sense of disorientation', which undermine 'our firm orientation to the ground'.²¹⁴ She describes clouds as 'cutting' or 'ripping' the senses, or as provoking an awareness of 'being unmoored'.²¹⁵ Elsewhere Krauss speaks of the associated 'content-less' ideas of the abject, formless, or base, which precede and underlie consciousness, and hence, which could be thought of through the psychoanalytic model of the unconscious.²¹⁶ In Jean-François Lyotard's *Discourse, Figure*, as Krauss points out, this unconscious is a corrosive and devolutionary force that counters the rational, conscious mind.²¹⁷ It is this idea of the unconscious that is captured in Krauss's way of thinking about clouds. The excessiveness of clouds can hence be thought through the psychoanalytic model of the unconscious, as a cutting or ripping force that disorients the rational mind.

²¹² Rosalind Krauss, 'The /Cloud/', in *Agnes Martin*, ed. by Barbara Haskell, Anna C. Chave and Rosalind Krauss (New York: The Whitney Museum of American Art, 1992), pp.155–165.

²¹³ Rosalind Krauss, 'Stieglitz/"Equivalents"', *October*, 11, Special Issue: Essays in Honor of Jay Leyda (winter 1979), 129-140.

²¹⁴ Krauss, 'Stieglitz/"Equivalents"' (p.135).

²¹⁵ Krauss, 'Stieglitz/"Equivalents"' (p.135).

²¹⁶ Rosalind Krauss and John Rajchman, 'Visual Gravities', *ANY: Architecture New York*, 5, Special Issue: Lightness (March/April 1994), 30-31 (p.30).

²¹⁷ Krauss and Rajchman, 'Visual Gravities' (p.30). Cf. Lyotard, *Discourse, Figure* (2011).

The paradigmatic ‘nebulosity’ of clouds can be re-interpreted through these ideas of the unconscious mind. Clouds have been produced as forms that focus the inter-related struts and rods that hold a structure together, to the point of disorienting these given orders of being, in a procedure of excessiveness and devolution that might otherwise be read as the rupture of the unconscious through the rational mind. In this respect, the role of clouds in representing digital media is really one of figuring the digital as a disorienting, ungrounded or unconscious space. Clouds are as such firmly associated, through the psychoanalytic model of the unconscious as excessive to structure, with a state of self-disorientation, or with the ripping or cutting of the self. Here, then, I might annex Krauss’s citation of Lyotard with Lacanian psychoanalytic theories of consciousness. Jacques Lacan argued that the self vacillates in an empty gap.²¹⁸ In this cut or opening, the status of the subject is disturbed. That the conscious self originates in this vacillation implies, as Roberto Harari aptly highlights, that it neither *is*, nor *is not*, but rather *is a state of becoming*.²¹⁹ The concept-being of clouds models this psychoanalytic theory of the tear in social being, or the self in a state of becoming.

This provokes a counter-reading of the use of Greek culture as the historical backdrop of computational media. Digital networks have been spatialised through reference to the Greek *agora*. Simultaneously, however, this turn to develop spatial figures for thinking digital networks has brought

²¹⁸ Jacques Lacan, *Ecrits: The First Complete Edition in English*, trans. by Bruce Fink (London: W.W.Norton and Company, 2006).

²¹⁹ Roberto Harari, ‘Hoop Net and *Tuché*’, *Lacan’s Four Fundamental Concepts of Psychoanalysis: An Introduction*, trans. by Judith Filc (New York: Other Press, 2004), pp.65-92, p.69.

clouds to the fore, as spaces that digital users enter and are immediately disoriented—as if torn from their social being. While this appears to dissolve the reference to Greek culture, I would claim that this working concept of clouds as devolutionary spaces makes reference to Greek theatre practice. As Edith Hall has suggested, the late-twentieth-century revival of Greek tragedy followed from 1970s feminist movements, particularly the sexual revolution of open female sexuality, the critique of gender conventions, and the representation, in tragic form, of marital breakdowns and women's social and familial roles.²²⁰ The orgiastic quality of Richard Schechner's *Dionysus in '69* is exemplary of this revival, as the work stimulates a sexual and sensual interpretation of Euripides's *Bacchae*.²²¹ This revived attention for Ancient Greek tragedy hinged upon the association of Dionysiac gatherings with orgiastic disorientation of the self.

The idea of a form of gathering existing beyond the regulatory orders of the state makes recourse to this post-1970s reading of Greek theatre practice extending from the late-twentieth century. Hence, in this chapter, I aim to interrogate the conceptuality of disoriented social interpellation that is captured in the figure of the cloud. Figuring forth ideas of social disorientation in the concept-being of clouds is not about using clouds to illustrate the unconscious self in its state of becoming. This is about transforming how we think of social interpellation, from the subjection of the self to a given social order or being, to the orgiastic de-

²²⁰ Edith Hall, 'Greek Tragedy and Tragic Fragments Today', *Greek Tragedy: Suffering Under the Sun* (Oxford: Oxford University Press, 2010), pp.328-346, p.329-330.

²²¹ Richard Schechner, The Performance Group, *Dionysus in '69*, live performance, The Performing Garage, New York, 1969.

sublimation of the self into a state of becoming. This is about reconfiguring the *agora* as the Dionysiac. Two key late-twentieth-century theorists, who played a hugely important role in this shifting history of conceptuality, were Jean-Pierre Vernant (1914–2007) and his collaborator Pierre Vidal-Naquet (1930–2006), who helped to move Classics toward analysing the psychic states permitted to Greek citizens. Indeed, using the theoretical framework of these writers, with a primary focus on Vernant, I am going to critically rectify the relationship between the Ancient Greek *agora*, where a political elite of men assemble or gather, and the concept of clouds as disorienting spaces wherein the unconscious ruptures through rectilinear or geometric orders of the socialised self. What is important here is understanding how, in Greek thought, the social function of theatre gatherings and the meteorological processes of clouds gathering intersect—or at the very least, that this is a junction that was covertly theorised by Vidal-Naquet and Vernant in their work upon the Greek psyche. In the interpretation of Vidal-Naquet and Vernant, how people are gathered into the chaotic Festivals of Dionysus is conceptually rich with the image of a mind disoriented from its social status, or perturbed from civic order. The way that Vidal-Naquet and Vernant imbue clouds with meaning revisits Aristotelian theories at, vitally, the junction where the tragic meets his meteorological philosophy of the forming and tearing of clouds.

What is significant about using clouds to denote the unconscious self is that it symbolically discloses clouds as running counter to the hegemonic orders of the city-state. On this basis, clouds are made to appear relatively autonomous from the regulatory hierarchy of social being. This is not the

sort of autonomy that is said to characterise Greek *agora*, rather, this mode of autonomy leads me to Aristotle's theories of Greek tragedy, to the escape from society into the aesthetic vacation of the tragic experience. Malcolm Heath has theorised that Aristotle's *Poetics* reveals poetry and tragedy as autonomous spheres of social life, where ethics are practised, tested and performed, and where tragic affects and poetic engagement are contingent upon and necessary to the political values of the surrounding city-state.²²² This autonomy ultimately differs from the space of the *agora*, as women, slaves and children were permitted to join the Dionysiac.²²³ The Festival of Dionysus disrupted the social in its governable forms, through ostensibly open and genuine modes of social participation. Aristotle was key in developing this divergent notion of autonomy, tied to tragedy, poetry and the arts.²²⁴

The way Vernant and Vidal-Naquet theorised Greek tragedy brought a sense of promise to Aristotle's ideas about theatre and poetry. Accordingly, the Dionysiac has been consistently theorised in contradistinction to the *agora*. The *agora* is thought to be a discursive space

²²² Malcolm Heath, 'Should There Have Been a *Polis* in Aristotle's *Poetics*?', *The Classical Quarterly*, 59.2 (December 2009), 468–485.

²²³ Heath, 'Should There Have Been a *Polis* in Aristotle's *Poetics*'?

²²⁴ The possibility of a philosophical debate between Aristotle and Plato, in light of the fact that Plato was still in the process of writing the *Republic* at the time that Aristotle delivered his *Poetics*, has led Gerald F. Else and Max Statkiewicz to argue that Plato's Book X, where he banishes poets, responds to Aristotle's *Poetics*. See Max Statkiewicz, 'Platonic Theater: Rigor and Play in the Republic', *MLN*, 115.5, Special Issue: Comparative Literature (December 2000), 1019–1051. Cf. Gerald F. Else, *The Structure and Date of Book 10 of Plato's REPUBLIC*, in *Abhandlungen der Heidelberger Akademie der Wissenschaften* (Phil.-hist. Klasse, 1972) 3. Abh. (Heidelberg: Carl Winter Universitätsverlag, 1972), esp. 53f; Gerald F. Else, *Plato and Aristotle on Poetry* (London: University of North Carolina Press, 1986), 69f.

where the cultural norms of *bios politikos* were normalised, whilst the Dionysiac is seen as a counter-hegemonic space where norms were thrown into question.²²⁵ Following Nietzsche's contradistinction of tragedy and the Apolline in Greek ideology, the Dionysus has in the main been sentimentalised as a state of being entirely beyond social law. I think here of the work of Antonio Negri and Michael Hardt, whose essays were collected in *Labor of Dionysus: A Critique of the State-Form* (1994).²²⁶ In the preface, Negri and Hardt compare 'the State's elaborate practical and theoretical apparatuses of control and exploitation' to 'the powers that subvert and pose a radical alternative to its order'.²²⁷ To the latter they ascribe 'Dionysus the god of living labor, creation on its own time', as opposed to capitalist orders of time.²²⁸

For Vernant, and beyond him Nietzsche, clouds have been conceptually associated with this creative time, setting a precedent for theorists such as Negri and Hardt, in their use of the Dionysiac as a conceptual expression of non-capitalist, sensuous, creative time and labour. At the opening of the chapter, I worked through references to cloud-based computational media as Greek *agora*. While many theorists have recognised this use of the Greek city-space as a discourse for computational media, it runs counter to the conventional theorisation of either form to speak of "the

²²⁵ Habermas refers to the *agora* as a space for *bios politikos* in Habermas, 'Preliminary Demarcation of a Type of Borgeois Public Sphere', *The Structural Transformation of the Public Sphere*, pp.1–26, p.3.

²²⁶ Michael Hardt and Antonio Negri, *Labor of Dionysus: A Critique of the State-Form*, Theory out of Bounds, vol. 4, ed. by Sandra Buckley, Brian Massumi and Michael Hardt (London: University of Minnesota Press, 1994).

²²⁷ Hardt and Negri, 'Preface', *Labor of Dionysus*, p.xiv.

²²⁸ Hardt and Negri, 'Preface', *Labor of Dionysus*, pp.xiii-xiv.

cloud” and of computational media as *agora*. Clouds are associated with the Dionysus not the *agora*, and so clouds are supposedly divergent, counter-hegemonic form. The cloud concept thus works to create an imaginary of creative, non-capitalist labour, but that ultimately subjects life to structures of expropriation. The Festival of Dionysus holds the promise of existence within the wider forming architectonics of the social, beyond social law, beyond the sorts of political participation that are formalised in the *agora*.

This knotted contradiction in the qualification of computational media as both *agora* and clouds is exactly the reason Aristotle is so important for interrogating the deep conceptual history of clouds. Aristotle’s theories of the Festival of Dionysus and his natural philosophy of clouds can be used to unpick the juncture between the Festival of Dionysus and the Greek *agora*. Linguistic analysis of Aristotle’s *Poetics* opens a critique of the fantasy of unified social becoming beyond social law. This linguistic analysis is applicable to the terminology he uses to speak about clouds in the *Meteorologica*. Overall, reading Aristotle’s theories about Greek tragedy as indicating where social life was brought into being is an opening for interrogating the sorts of (dis)union and (dis)embodiment that permit social gathering or assembly.

The anthropological project of reading Aristotle’s Poetics

In his first monograph, Vernant draws from materials as old as fragments of Mycenaean tablets to Homeric poetry, working across this historical

spectrum to understand Greek structures of thought.²²⁹ Vernant assesses how the Mycenaean militarised social structures became transposed into a competitive body politic, centered upon ‘oratorical contest, a battle of arguments whose theater was the agora, the public square, which had been a meeting place before it was a market place’.²³⁰ Vernant emphasises the military history of the space of the *agora*, suggesting that:

[...] the term harks back to the gathering of warriors, the *laos* joined in military formation. There appears to be an unbroken line of development from early military gathering to the gathering of citizens in the oligarchic states of democratic *ecclesia*.²³¹

Gathering as a concept of social union has a military history that developed through the performance of social, civic interactions in Ancient Mycenaean cultural spaces. This line of development continues through the appropriation of Mycenaean palace ruins by the democratic commons of Greek culture, whereby the expanse of the *agora* served, at least within Vernant’s historical anthropological lens, as an architecture of thought: an ‘urban framework in fact defined [as] a mental space’.²³² The space of the *polis* subjected persons to internal deliberations that remapped their interior psyche through the systems of law extending through the social body, on account of the fact that, as Vernant argues, ‘[the] art of politics became

²²⁹ Jean-Pierre Vernant, ‘The Crisis of Sovereignty’, *The Origins of Greek Thought* (London: Methuen, 1982), pp.38–48, p.39.

²³⁰ Vernant, ‘The Crisis of Sovereignty’, p.46.

²³¹ Vernant, ‘The Crisis of Sovereignty’, p.46.

²³² Vernant, ‘The Crisis of Sovereignty’, p.48.

essentially the management of language'.²³³ This emphasis on language is fundamental to how these architectural spaces might be seen as entailing social structures. Greek *agora* was aggregating, coming together or gathering, overtly implying union, while covertly signifying exclusion and ostracism. The social structure enforced by the open space of the *agora* was such that individuals reciprocally sought likeness or sameness in one another, and Vernant saw this quality as a shift away from the hierarchical relations of submission and dominance that were pervasive before 'open' meeting or market places nucleated and instated the broader logic of civic relations.

Vernant's views on the structure of Greek thought echo Aristotle's writings about the structure of the cosmos, influenced by earlier Greek cosmological theories of Anaximander and Eudoxus. For Vernant:

The world of social relations thus formed a coherent system, governed by numerical relations and correspondences that permitted the citizens to declare themselves "the same," to enter into relations of mutual equality, symmetry, and reciprocity, and together to form of unified cosmos. [...] Sovereignty passed from one group to another, from one individual to another, in a regular cycle[...] the social realm had the form of a centered and circular cosmos, in which each citizen, because he was like all the others, would have to cover the entire circuit as time went round,

²³³ Jean-Pierre Vernant, 'The Spiritual Universe of the *Polis*', *The Origins of Greek Thought*, pp.49–68, p.50.

successively occupying and surrendering each of the symmetrical positions that made up civic space.²³⁴

Vernant means to elaborate how the physical arrangement of Greek space entailed the shift away from rectilinear hierarchical relations. However, the literal, physical arrangement of civic space is somewhat eclipsed by the metaphorical register of cycle, circularity and orbit. Where Vernant refers to the ‘centered and circular cosmos’ he echoes the homocentric model of the universe given by Aristotle, echoing Eudoxus and Callippus. In this homocentric model, espoused by Aristotle in the *Meteorologica*, heavenly bodies are attached to spheres moving in a circular motion around a central sublunary sphere.²³⁵ These spheres move in strata risings outwards from the earth at the centre of the cosmos.

Under the analysis of Vernant, this philosophy of natural forms becomes the anthropology of social form, or a human cosmos of cyclical regularity and symmetry. By drawing these parallels, Vernant points to the way the *polis* took effect as an encoding of social norms, whereby Greek thinkers projected onto ‘the world of nature that conception of law and order whose success in the city had made the human world a cosmos’.²³⁶ For Vernant, Anaximander made the cosmos into theory, spectacle and model

²³⁴ Jean-Pierre Vernant, ‘The Structure of the Human Cosmos’, *The Origins of Greek Thought*, pp.82–101, p.101.

²³⁵ Aristotle, *Meteorologica*, trans. by Henry Desmond Pritchard Lee (London: William Heinemann Ltd., 1952), I.II.339a11–20. All further references to this edition are given after quotations in the text.

²³⁶ Jean-Pierre Vernant, ‘Cosmogonies and Myths of Sovereignty’, *The Origins of Greek Thought*, pp.102–118, p.108.

(literally making a sphere called a *gnomon*).²³⁷ Equally, Anaximander made equality and symmetry of *isomania*, the law of the city, into the law of nature.²³⁸ Hence, in Anaximander, Greek cosmology is a political matter, and the cosmological model of Anaximander's work is contextualised, for Vernant, 'within the framework of the institution of the city (the city that makes its appearance during precisely the period between Hesiod and Anaximander)'.²³⁹ Inherited from the Milesians, the instantiation of a Greek *polis* entailed structuring the city-space around an apparently cosmological *agora*, or gathering space, from which all points extend outwards—a literal, centrifugal architectonics of *polis* state control—equidistant from the centre.²⁴⁰ It is of course necessary to question the geometrical balance implied by the application of a cosmological model to these architectonics of civic life. The *agora* may have been equidistant from all points in the city-space, but this by no means implies that this was a space of equality, open to all. As mentioned, exclusion was foundational to the performance of civic order practised in these nucleating spaces. Vernant himself highlights that women were instead enclosed in the dark interiors of domestic space.²⁴¹ In his later co-written work with Vidal-Naquet, Vernant further explores this notion of a 'human cosmos' by referring to an explicitly gendered

²³⁷ Jean-Pierre Vernant, 'The New Image of the World', *The Origins of Greek Thought*, pp.119–129, p.120.

²³⁸ Vernant, 'The New Image of the World', 122.

²³⁹ Jean-Pierre Vernant, 'Geometry and Spherical Astronomy in the First Greek Cosmology', *Myth and Thought Among the Greeks* (London: Routledge and Kegan Paul, 1983), pp.176–189, p.181.

²⁴⁰ Jean-Pierre Vernant, 'Hestia–Hermes: The Religious Expression of Space and Movement in Ancient Greece', *Myth and Thought*, pp.127–175, pp.127–157.

²⁴¹ Vernant, 'Hestia–Hermes: The Religious Expression of Space and Movement in Ancient Greece', pp.127–175.

structure of centre and periphery.²⁴² The social imbalance of leaving women in domestic spaces, at the domestic hearth where the procreative seed of man is passively housed, allowed men to leave the home and engage in political citizenship (in the alternative centre of the *agora*).²⁴³ Vernant envisages this social cosmos as a model of cultural and political practice, hence, he examines social thought through the idea of centre and periphery, of regular cycles around a female hearth (or a domestic nucleus), and as civic space extending outwards from a place for gathering (the economic nucleus of the *agora*), intended for meeting, buying, selling and exchanging goods.²⁴⁴ Doing so, he states that:

[the] advent of the *polis*, the birth of philosophy—the two sequences of phenomena are so closely linked that the origin of rational thought must be seen as bound up with the social and mental structures peculiar to the Greek city. [...] If in [Aristotle's] eyes *Homo sapiens* was *Homo politicus*, it was because Reason itself was in essence political.²⁴⁵

For Vernant, Greek culture was characterised by an essentialising political rhetoric of the human cosmos. Within this anthropological understanding of cosmological thought, what came into being with the emergence of the Greek city-state was not an architectural arrangement, but the idea of human society as centre and periphery or as cycle and strata. This cosmological

²⁴² Jean-Pierre Vernant, 'Ambiguity and Reversal: On the Enigmatic Structure of Oedipus Rex' in Jean-Pierre Vernant and Pierre Vidal-Naquet, *Myth and Tragedy in Ancient Greece*, trans. by Janet Lloyd (New York: Zone Books, 1990), pp.113-140, p.126.

²⁴³ Vernant, 'Hestia-Hermes', pp.132-40.

²⁴⁴ Vernant, 'Ambiguity and Reversal', *Myth and Tragedy*, p.126.

²⁴⁵ Vernant, 'Ambiguity and Reversal', *Myth and Tragedy*, p.130.

language of universal cycles, orbits and stratified spheres hence valorises the foundational exclusionary social practice of slavery and ostracism, known to uphold Greek culture.

From the outset of his published writings in the field of Classics, Vernant was interested in how tragedy might disrupt or rupture through this human cosmos. In a paper delivered in 1966 as part of *The Languages of Criticism and the Sciences of Man* seminar series at Johns Hopkins university, Vernant performed a close reading of *The Seven Against Thebes*, *Oedipus The King*, *Oedipus at Colonus*, *Antigone*, and Aeschylus's *Oresteia* trilogy.²⁴⁶ In this paper, Vernant's style of revising classicism makes contradiction and indeterminacy the essence of these Greek tragic texts. His paper, entitled 'Greek Tragedy: Problems of Interpretation', sets out to promote historiographic close readings of Greek tragedies.²⁴⁷ This allows him to explore the indeterminacy of tragedy as the essence of the tragic, as if the tragic transcends the historical moment, throwing the human cosmos, law and order into a state of self-questioning.

Vernant thus argues that the dismissal of hierarchical systems and enforcement of public law gave rise to the spirit of asceticism associated with Greek cults: opposed to the emerging logic of *arete* [virtue], *homonioia* [unanimity], *eunomia* [law and order] and *epimeleia* [a vigilant self-control], Vernant describes the exclusion of the excessive practices or 'the irrational forms' of *koros* [satiety], *hybris/hubris* [excessive pride toward the gods], *pleonexia* [greediness] as a spirit of *eris* [strife] that 'bred'

²⁴⁶ Jean-Pierre Vernant, 'Greek Tragedy: Problems of Interpretation', *The Languages of Criticism and the Sciences of Man*, ed. by Macksey and Donato, pp.273–295.

²⁴⁷ Vernant, 'Greek Tragedy: Problems of Interpretation', p.273.

dysnomia [disorder].²⁴⁸ It is here that Vernant begins to lay the groundwork for his later developed arguments about poetry, tragedy and the social function of the Festival of Dionysus. He goes on to develop a string of synonymous terms for the disordered excesses of Greek society under the new public law of the *polis*, including ‘madness’, *lyssa* [raging madness, raving, frenzy], ‘pollution’ and ‘the appetites of the flesh’.²⁴⁹ The economic basis of the exclusion of these excesses is the need to establish a value system that injects equality at the level of money, so as to regulate commercial exchange and ensure the subordination of lower classes, without subjecting these lower classes to injustice.²⁵⁰ The idea of “excess” is generated so as to site what is beyond the law, or in other words, what is beyond the protection of law.

These civic symmetries and economic structures hence form the basis of Vernant’s theory of social law. Madness, *lyssa/lussa* and *hubris* each exist beyond the *polis* because they are outside economic regulation. In Vernant’s later publications he conflates these excluded excesses with the spatialisation of Greek culture that begins his 1962 publication; such that the *lyssa*, *hubris*, madness or pollution of the mind takes the place of the Greek *agora*, itself a development of the military gatherings of Mycenaean

²⁴⁸ Jean-Pierre Vernant, ‘Imitations of the Will in Greek Tragedy’, in Vernant and Vidal-Naquet, *Myth and Tragedy*, pp.49–84, p.84; ‘Oedipus without the Complex’, pp.85–112: translations for *eumonia* and *homonoia*, p.92. Translations for *koros* and *pleonexia* can be found in Liddell and Scott, *Greek–English Lexicon* (1897).

²⁴⁹ Vernant, ‘Oedipus without the Complex’, p.88. Translations for *lyssa* can be found in Liddell and Scott, *Greek-English Lexicon* (1897).

²⁵⁰ Vernant, ‘Oedipus without the Complex’, pp.96–97.

elite.²⁵¹ Unlike the *agora*, the excess is nucleated within yet *exceeding beyond* and *disobedient to* the order of the city-state. The Festival of Dionysus is like an *agora*, an exemplary focus for cultural gathering. But instead of use for trade and democratic assemblies this space was used for performing madness, strife, pollution and sexual desire.

In the co-authored work with Vidal-Naquet, Vernant starts developing these assemblies of madness and sexual desire into metaphors for darkness, enshrouding, shadowing and obfuscation. For instance, Vernant returns to the cosmological works of Empedocles, and suggests that in Empedocles, ‘the fall of the daemons precipitates them into a dark cave, in the meadow of Ate’.²⁵² *Atē*, Vernant writes, is descended from night, related to darkness, or ‘an image of darkness which enshrouds the human spirit suddenly, enfolding it in shadows, hiding from it the straight way of truth and justice, and thus dragging it to its doom’; *atē* is a criminal waywardness; it is a figure of ‘frenzied strife’ and also a shadow that, as it descends on the individual, brings an outcome of strife.²⁵³ This imagery merges *hubris* with the Dionysiac moment—both being read through Vernant’s cultural lens of excessive Greek cultural practices. That is, *Lussa* and *hubris* are conflated in the image of *atē*.

Later in the text, *atē* is likened to a ‘cloud’ that envelops ‘man’ and ‘makes him blind’. The passage where Vernant makes this comparison is as follows:

²⁵¹ Vernant, ‘Geometry and Spherical Astronomy’, *Myth and Thought*, p.184; ‘The Crisis of Sovereignty’, *The Origins of Greek Thought*, p.46.

²⁵² Jean-Pierre Vernant, ‘The River of Amélès and the Méléte’, *Myth and Thought*, pp.106–124, pp.115.

²⁵³ Vernant, ‘The River of Amélès and the Méléte’, *Myth and Thought*, pp.115–116.

When I say that man is presented as confronting his own action, I must add that one cannot understand this situation, or the tragic moment, except by referring here again to a past time. Just as the institution of the law is perpetually confronted with an anterior state, so is man in Greek tragedy perpetually confronted with old concepts of action, errors, and guilt—concepts which are disputed but still weigh heavily on him. The central notion is no longer *dikè*, rather, it is now *harmatia*. That is, the verb which represents error and guilt in the form of what would be *errare* in Latin—a word which means at the same time that one has committed an error, made a mistake, and committed a crime. What is *harmatia*? *Harmatia* means, in its proper [286] sense, blindness. That is, something which surpasses man, which comes crashing down on him, which keeps him from seeing things as they are, so that he takes good for evil, commits a crime and is then punished by this crime. His blindness, his criminal act and the punishment are not separate realities. It is the same supernatural power—blindness, *atè*, madness, *hubris*—which takes on different aspects while remaining the same. It is like a cloud in which man is enveloped and which makes him blind, makes him criminal, and then punishes him. It is the same power. It is a notion (and I will not dwell on it since you are all familiar with this concept of *harmatia*) which is obviously still present, in a way, in tragedy.²⁵⁴

This perspective of Greek tragedy seeks to revise conventional views of the flawed or ill-fated nature of Greek tragic characters. The idea that ‘something which surpasses man’ leads characters to commit crimes, for

²⁵⁴ Jean-Pierre Vernant, ‘The Shields of the Heroes’, in Vernant and Vidal-Naquet, *Myth and Tragedy*, pp.273–300, pp.285–286.

which they are destined to be punished, implies that these characters temporarily exceed the cultural logic of the *polis*, yet do so remaining embedded within and subject to its laws. The ‘cloud’ of *atē* hence embodies a disciplinary mechanism of divergence. The ‘cloud’ of *atē* figures forth an idea of moral blindness, as well as the classification of this divergence as crime according with the social law from which it diverges and within which it is embedded.

In this sense, Vernant retroactively reads Greek tragedy as a disciplinary social mechanism. He nucleates the orgiastic chaos of the Dionysiac in the figure of the tragic character, whose actions are pathologised as breaking from social norms—and then used to subject that character to the apt punishment. This is reminiscent of Georges Canguillhem’s contemporaneous historicisation of ‘the pathological’, in his 1966 work, *The Normal and the Pathological*. Canguillhem’s discussion of the pathological is sparked by his etymological analysis of the Greek root of ‘anomaly’—stemming from the word ‘*anomalía*’, meaning unevenness, irregularity or roughness, as opposed to ‘*omalos*’, meaning even terrain.²⁵⁵ For both Vernant and Canguillhem the vacation of the law-abiding self into states of madness, ruin, hallucination or self-destruction stood beyond the normative law of social life. For Canguillhem, the normal draws its power from qualifying quantitative difference as abnormal divergence. For Vernant, the power of the *polis* is characterised by the power it possesses to recuperate its orders through the blindness of the cloud of *atē*. Hence, in

²⁵⁵ Georges Canguillhem, ‘A Critical Examination of Certain Concepts’, *The Normal and the Pathological*, trans. by Carolyn R. Fawcett and Robert S. Cohen (New York: Zone Books, 1991), pp.125–150, p.131.

both, Greek culture is used to re-theorise what normal means and how social codes work in reciprocity with that which is defined as beyond or excessive.

These parallels could be seen to stem from the contact between Vernant and Canguillhem, who both participated in liberation movements of 1940s France. As Elisabeth Roudinesco documents, Vernant invited Canguillhem to join the Resistance movement being organised in the Auvergne region in the early 1940s.²⁵⁶ In addition to this companionship, Roudinesco hints at intellectual overlaps when she historicises Canguillhem's ideas about political resistance through his foreknowledge of Greek tragedy. 'Heroism,' Roudinesco reports Canguillhem to have said, 'is a manner of conceiving of action under the category of a universal, from which the psychological subject in any form is excluded'.²⁵⁷ This psychological exclusion of the subject from their own actions is remarkably similar to the 'something which surpasses man, which comes crashing down on him', in Vernant's theories of Greek tragedy. The cloud of *atē* symbolically expresses universal action—'something which surpasses man'—that harbours extreme reflexes of exclusion: of the subject from immediate social law and of the subject from their own subjectivity. Subjects interpellated into the cloud of *atē* are de-sublimated from the mechanisms of social interpellation previously constituting their subjectivity, descending through the anomalous space of the Dionysiac into abnormal states of madness, blindness and *hubris*. Vernant uses clouds as a

²⁵⁶ Elisabeth Roudinesco, 'Georges Canguillhem: A Philosophy of Heroism', *Philosophy in Turbulent Times: Canguillhem, Sartre, Foucault, Althusser, Deleuze, Derrida*, trans. William McCuaig (New York: Columbia University Press, 2008), pp.1–32, p.10.

²⁵⁷ Roudinesco, 'Georges Canguillhem', p.13.

symbolic referent for encoding this descent into excessive cultural practice. For Vernant, clouds are figurations of the anomalous space of political resistance, here figured as the Festival of Dionysus. Much akin to Canguillhem's arguments about abnormality and social norms, for Vernant, clouds de-hierarchise even while they reassert social law. They re-constitute the tragic character as a psychosocial subject, through inclining that tragic character toward de-sublimation, which ultimately delivers them into the category of the universal.

In this respect, Vernant's work echoes the early work of Friedrich Nietzsche, who was equally drawn to explore the psychic states made permissible through the Greek tragic gathering. In *The Birth of Tragedy*, Nietzsche writes of the 'reciprocal necessity' of a primal substratum (elsewhere figured as chaos or de-sublimation) and the forms that emerge from this substratum. He describes this relation between social order and chaos as the reciprocity between 'the Dionysiac and the Apolline,' which co-produce one another 'in a sequence of renewed births, mutually intensifying one another'.²⁵⁸ This understanding of the Festival of Dionysus is drawn from Nietzsche's oblique reading of Euripides's *Bacchae*, the tragedy that was first performed at the Festival of Dionysus in 405BC, about which Nietzsche writes remotely and abstractly. In the *Bacchae*, Dionysus the god appears in human form and possesses the Maenads. At the summation of the play, Dionysus possesses Pentheus, who is torn apart in the hysteria of the Maenads. Perhaps in light of such eventualities, the contemporary theatre theorist Erika Fischer-Lichte has suggestively

²⁵⁸ Nietzsche, *The Birth of Tragedy*, trans. by Shaun Whiteside, ed. by Michael Tanner (London: Penguin Books, 1993), p.25, p.27.

described these ritualistic Greek theatre events as the ‘*sparagmos* (‘tearing apart)’.²⁵⁹ Nietzsche was drawn to see Greek tragedy as a kind of ‘tearing apart’ writing that ‘the veil of Maya had been *rent* and now *hung in rags* before the mysterious primal Oneness [my emphasis]’.²⁶⁰

In seeking an apt metaphor for describing the tear of the tragic, Nietzsche was equally drawn to use clouds to express his thoughts on Greek tragedy. He writes:

The shape of the Greek theatre recalls a lonely mountain valley: the stage architecture appears as a luminous cloud formation seen by the Bacchae, as they swarm down from the mountains, as the wonderful frame in the middle of which the image of Dionysus is seen.²⁶¹

In Nietzsche’s thinking, it is the Bacchae who descend from the beautiful heights of the mountains, flocking and thronging into the cloud-containing valley of the theatre sanctuary. This syntactical slippage between the ‘cloud image’ (*Wolkenbild*) and the humans that ‘swarm down’ (*herumschwärmenden*/swarming around) suggests the Bacchanal descent as a phase-transition, from solid bodies to vaporous ubiquities, via a material process of de-sublimation serving to counteract and dissolve the psychic sublimation of socialization. Attending the theatre, for Nietzsche, was thus tantamount to the meteoric phase-shift of subjectivity. Descending upon the

²⁵⁹ Erika Fischer-Lichte, ‘Performance as event—reception as transformation’, in *Theorising Performance: Greek Drama, Cultural History and Critical Practice* ed. by Edith Hall and Stephen Harrop (London: Duckworth, 2010), pp.29–42, p.32.

²⁶⁰ Nietzsche, *The Birth of Tragedy*, p.21.

²⁶¹ Nietzsche, *The Birth of Tragedy*, p.42.

theatre site as a cloud, ‘the audience looked down not upon their immediate civic environment but upon the sanctuary of the god, and upon the mountains and sky beyond’.²⁶² Clouds hence illustrate the unknotting of the social through the gathering for the Festival of Dionysus, in much the same manner that in Vernant clouds illustrate gathering through anti-normative social practices of *hubris*. Figured in clouds, tragedy thereby stands in a counter-hegemonic relation to social regulation, or, as Vernant claims, it ‘does not reflect that reality but calls it into question. By depicting it rent and divided against itself, it turns it into a problem’.²⁶³ The slippage between clouds and human gatherings of *hubris* qualifies these ecological forms as referents for the tragic, figured as a counter-hegemonic rent in the social fabric of Greek society.

In Vernant’s co-authored publication with Vidal-Naquet, he elaborates on this de-sublimatory function of Dionysiac orgiastic practices. Here he writes of social interpellation and the transcendental orders of the Greek *polis*. Eteocles’ madness, Vernant writes:

[...] envelops him in the dark cloud of *atē*, penetrating him as a god takes possession of whomever he has decided to bring low, from within, in a form of *mania*, a *lussa*, a delirium that breeds criminal acts of *hubris*. The

²⁶² David Wiles, ‘The Theatre of Dionysus’, *Tragedy in Athens: Performance Space and Theatrical Meaning* (Cambridge: Cambridge University Press, 1997), pp.23–62, p.36.

²⁶³ Jean-Pierre Vernant, ‘Tensions and Ambiguities in Greek Tragedy’, in Vernant and Vidal-Naquet, *Myth and Tragedy*, pp.29-48, p.33.

madness of Eteocles is presented within him, but that does not prevent it also appearing extraneous and exterior to him.²⁶⁴

The figure of the cloud allows Vernant to alienate Eteocles from his own madness. This in turn allows Vernant to depict the deviance of Eteocles, his criminal act and his punishment, as one formulation of tragic characterisation. This echoes Vernant's much earlier work on Greek tragedy. Speaking after his paper at the *Languages of Criticism and the Sciences of Man* seminar, Vernant draws attention to the work of Eric Robertson Dodds.²⁶⁵ Vernant has obviously been influenced by Dodds' thinking in *The Greeks and the Irrational* (1951). In this work, Dodds writes of madness as a state of psychic de-sublimation that digresses from social law, or as he puts it, as a 'state of mind—a temporary *clouding* or bewildering of the normal consciousness [my emphasis]'.²⁶⁶ Vernant develops this language of 'clouding' and uses clouds as symbols for extra-historical elements of tragedy, through which to stage an anthropological investigation into Greek tragic works. Subsequently, that symbol becomes a referent for the transcendent self that exceeds the tragic character's historical moment.

Vernant intends this state of historical excessiveness as a means of analysing works such as Aeschylus's *Oresteia* trilogy. Perhaps

²⁶⁴ Vernant, 'Tensions and Ambiguities in Greek Tragedy', *Myth and Tragedy*, p.35.

²⁶⁵ Vernant, 'Greek Tragedy: Problems of Interpretation', p.282, p.293: Vernant does not refer to Dodds explicitly in the body of his paper, but in the transcribed discussion that follows he describes the Greek texts cited in Dodds's work (in response to a spontaneous question) suggesting Vernant had a detailed knowledge of *The Greek and the Irrational*.

²⁶⁶ E. R. Dodds, 'Agamemnon's Apology', *The Greek and the Irrational* (Berkeley: University of California Press, 1951), pp.1-27, p.7.

unsurprisingly then, it is possible to go back to those works and identify the theoretical emphases that Nietzsche, Dodds and Vernant later compounded in the concept of clouds. At the beginning of the *Oresteia* trilogy of Aeschylus, spectators gather in theatre space, before the old men of Argos assemble on stage. The form of what is to come is neither clear to the chorus nor to the spectators seated in the concentric arcs around the stage space, and hence Aeschylus describes the stage space as ‘a dream that sways and wavers/ into the hard light of day’.²⁶⁷ This language of wavering echoes the emphases that Vernant places on indeterminacy as the central feature of tragedy. Within Vernant’s reading, the theatre space is suspended in indeterminate anticipation, marking the dawn of day at sea. Spectators waver in the light of the beacons seen by the watchman, just as the chorus sway and waver in the sacrificial flames of Clytaemnestra’s ritual fires, waiting, worried to know why she has lit these rituals, concerned for the unknown course of the tragedy.

Aeschylus begins the tragedy by transforming the theatre space into a model of the cosmos. When the watchman enters the stage and starts to speak he draws attention to the surrounding stars of the heavens, ‘our great blazing kings of the sky’.²⁶⁸ The metaphorical stirring of these stars sparks the fires that burn and signal the victorious return of Agamemnon, which likewise kindles the flames of Clytaemnestra’s ritual flames. Clytaemnestra lights fires and speaks fire. Her scorching appellation to the ‘god of fire – rushing fire from Ida!’ meets with shipping imagery, in the words of the

²⁶⁷ Aeschylus, *Agamemnon*, from *The Oresteia*, trans. by Robert Fagles (Penguin Classics: London, 1979), p.106 (lines 91–92).

²⁶⁸ Aeschylus, *Agamemnon*, p.103 (line 8).

chorus. The fires put the heavens into motion and meet with the waters of the sea. And it is here that the soul (ψυχή) of tragedy begins to synthesise (σύνθεσιν). Aeschylus' play comes-into-being through the reconfiguration of human society into a human cosmos. The excess of tragedy extends from this cosmological reconfiguration, as if the human cosmos brings the tragic excess into being.

In a revealing exercise of analysis, Michael Davis highlights that rational thought is the basis of tragic theatre, as 'it looks as though the putting together of actions or deeds is the[...] first principle of imitation of actions'.²⁶⁹ It is for this reason, I believe, that E. R. Dodds speaks of the Homeric *atē* as 'a temporary clouding or bewildering of the normal consciousness'.²⁷⁰ Dodds formulates psychic obfuscation as a state of becoming 'overdetermined'.²⁷¹ At least in the case of Agamemnon, who ascribes his psychic state to Zeus, *moira* and the Furies, *atē* is the overdetermination of the hero's actions that drives him toward guilt and apology. Agamemnon may select an action because he feels divined to do, yet the 'cloud of *atē*' produces the drama of this selection as contingent upon his rationality. He has murdered Iphigenia, yet he could have done otherwise; the House of Agamemnon could have been otherwise—things could have been otherwise in Aeschylus's *Oresteia*. The contradictory 'cloud of *atē*', as Rosenmeyer alludes, hence offers 'a full exposition of

²⁶⁹ Michael Davis, 'Second Things (1447a8–18)', *The Poetry of Philosophy: On Aristotle's Poetics* (South Bend, Indiana: St. Augustine's Press, 1992), pp.3-10: Plot as the 'putting together [*synthesis*] of deeds [*pragmata*] (1450a38-39); plot as the soul of tragedy, p.4.

²⁷⁰ Dodds, 'Agamemnon's Apology', p.7.

²⁷¹ Dodds, 'Agamemnon's Apology', p.7.

what is felt always to be the truth'.²⁷² Agamemnon must act, yet how he acts is not the only possible course of action. Vernant's theorem of the 'cloud of *atē*' expresses this tragedy as stemming from the overdetermined state of Agamemnon's action.

Aristophanes' *Clouds* offers a further example of this link between rational overdeterminacy and clouds. Aristophanes' *Clouds* (423BC) satires the emergence of a new generation of thought in the late-4th century (BC), where the traditional belief in gods was being challenged by Socratic natural philosophy. In the play, the philosopher Socrates is satirically characterised as the teacher at a 'Thinkery', where students learn rhetoric, new morality, and the natural sciences of astrology and meteorology.²⁷³ Socrates instructs students on orders of the universe that challenge the divine cosmos. Throughout the play a chorus of clouds mocks Socrates for these beliefs by acting to shroud his insight into the fatal (and arguably tragic) demise that his 'Thinkery' will bring him. The clouds are, in the words of Socrates, 'the celestial Clouds, the patron goddesses of the layabout. From them we get our intelligence, our dialect, our reason, our fantasy and all our argumentative talents'.²⁷⁴ Socrates parallels the 'Thinkery' with the clouds, as if clouds were rational spaces. The clouds, on the other hand, do not express their form through dialect or reason, but through allusions to the Dionysus. The chorus opines:

²⁷² Thomas G. Rosenmeyer, 'Gods', *The Art of Aeschylus* (London: University of California Press, 1982), pp.259–283, p.273.

²⁷³ Aristophanes, *The Clouds*, in *Lysistrata and Other Plays: The Acharnians, The Clouds, Lysistrata*, trans. by Alan H. Sommerstein (London: Penguin Books, 2002), pp.75–132, p.79 (line 128).

²⁷⁴ Aristophanes, *The Clouds*, pp.86–87 (lines 316–318).

Maids of Rain, come now where Pallas

Rules the loveliest of land on earth,

Rich and shining land of Cecrops

Full of men of valiant worth

[...]

Where stand lofty, beauteous temples

Full of gifts beyond all price;

Where no season lacks its share of

Feast, procession, sacrifice;

Where they hold to Dionysus

Joyous feast at start of spring,

Heat the pipes and hear the chorus

In melodious contest sing.²⁷⁵

The stacks of beauteous temples parallel the ‘Maids of rain’, both referring to the clouds of the chorus. Hence, it is the clouds that ‘hold to Dionysus’, which is the festival of ‘Feast, procession, sacrifice’. While Socrates proposes that clouds are the source of his ‘intellect’, in an earlier speech to Strepsiades he insinuates that his own mind is actually mingled with the clouds, reflecting:

Why, for any accurate investigation of meteorological

phenomena it is indispensable to get one’s thoughts into a

state of *suspension* and mix its minute particles into the air

²⁷⁵ Aristophanes, *The Clouds*, p.86 (lines 299-314).

which they so closely resemble.²⁷⁶

Socrates ventures to exceed the law of the gods. Having drawn Strepsiades into this venture with him, Strepsiades takes his revenge by burning down the ‘Thinkery’ with Socrates inside. The comic content of the above mingling of Socrates’ mind with particles of a cloud, depends upon the audience appreciating that to mingle ‘one’s thoughts’ with clouds is to exceed the law of the city-state and to descend into a tragic state of questioning over-determinacy. Indeed, read in this manner, the satirical qualities of the passage as foreclosing the demise of Socrates hangs upon the audience’s appreciation of Greek tragedy as a “clouding” of the mind. The humour of Aristophanes’ work would depend on the audience’s prior knowledge of the conceptual overlap between clouds and the psychic state of over-determinacy that characterises Greek tragedy. This begins to suggest that the elision of clouds and the tragic excess of *hubris* runs deeper through the history of conceptualising these forms. The qualities that Nietzsche, Dodds and Vernant condone upon clouds extend a style of thinking already at play in the work of Aristophanes.

For this reason, I will turn shortly to explore how clouds were theorised in Aristotle’s subsequent theoretical work on tragedy, looking at how his theory of aesthetic form intersects with his natural philosophy of meteorological phenomena. In Aristotle’s *Poetics* (c.335BC), the Ancient Greek word for gathering (συνίστασθαι / *sunistasthai*) is used in the

²⁷⁶ Aristophanes, *The Clouds*, p.83 (lines 228-231).

introduction of the text to denote how a poem puts things together.²⁷⁷ In what follows I will be drawn to argue that Aristotle means more than the construction of mimesis, but the gathering of bodies for the Festival of Dionysus. The term συνίστασθαι (*sunistasthai*) is etymologically allied with συνιστώ (*sunisto*), which means the act of constituting a State, company or institution.

Building on these linguistic echoes, it is possible to work through Aristotle's *Poetics* and reflect that the gathering recuperates the state because the gathering affirms the order beyond its disorder, instituting the *polis* via a process of social psychic sublimation. This is in keeping with the historicist reading of the purpose of the Festival of Dionysus. Robert Fagles and W. B. Stanford note that, when Peisistratos founded 'the Festival of Dionysus, the public recitations of Homer and the competitions of the tragic poets', he envisioned that 'Tragedy, in Aeschylus' hands, might empower the young democracy'.²⁷⁸ The Festival of Dionysus was intended as a vacation from the orders of the state, not the total absolution of Greek subjects from those orders. This reflects the writings of Vernant, for whom myths, royal lineages, and the natural rights of religion, served the purpose of tearing the ordered 'human cosmos' of Greek society, but were never intended to deconstruct it entirely.²⁷⁹

²⁷⁷ Aristotle, *Aristotle's Ars Poetica*, ed. by Rudolph Kassel (Oxford: Clarendon Press, 1966), 1447a.

²⁷⁸ Robert Fagles and W.B. Stanford, 'A Reading of the Oresteia: The Serpent and the Eagle' in Aeschylus, *The Oresteia* (London: Penguin, 1979), pp.13–98, pp.20–21.

²⁷⁹ Jean-Pierre Vernant, 'The Historical Moment of Tragedy in Greece Some of the Social and Psychological Conditions', in Vernant and Vidal-Naquet, *Myth and Tragedy*, pp.23–28, pp.26–27.

Through these gatherings the mythical and the heroic become opposed—a conflict that opens a conflict of responsibility in the subject. Aristotle’s works do not simply provide the historical backdrop to argue that this conflict in the subject is foreclosed as an event in their confinement to social law. The *Poetics* alone could serve to substantiate this theory, through the implied autonomy of theatre gatherings from social law and the realities of linguistic allusions of the συνίστασθαι (*sunistasthai*) or gathering. Rather, the relationship between the *Poetics* and Aristotle’s *Meteorologica* (350BC) deepens the history of deploying clouds as appropriate symbols for this notion of the theatre gathering as συνίστασθαι (*sunistasthai*).

The overlapping language for clouds and theatre gatherings, when reading the *Poetics* and the *Meteorologica* hand-in-hand, suggests the overlapping concept-being of clouds and theatre gatherings. This deep history will in turn challenge the late twentieth-century tendency to associate clouds with drug-induced, orgiastic, psychedelic vacations from the self, as if these were liberating experiences. Rather than liberating the self from the social, the idea of becoming “clouded” or “cloud-like” is only conceivable through Greek modes of social separateness and ostracism befitting capitalist modes of production.²⁸⁰

²⁸⁰ Melamed, ‘Racial Capitalism’.

Aristotle's Poetics and Meteorologica

The aforementioned 'human cosmos' provides a point of access to the way clouds are theorised in Aristotle's writings. Following Eudoxus, Aristotle developed the concentric model of the universe to structure the sublunary spheres into four smaller spheres: earth, water, air, and around that, closest to the moon, fire (*Met.II.II.354b24–5*). This allowed him to formulate his theory of exhalations, the fundamental doctrine of his philosophy of meteorological forms, or '*ta meteora*' meaning 'things suspended in mid-air'.²⁸¹ Through this theory Aristotle offers a philosophical doctrine that determines how natural and physical forms existing above the ground and beneath the moon (in the sublunary sphere) come into being and decompose. The sublunary sphere at the centre of Aristotle's cosmos—what might be called the earth and the atmosphere—is thus composed of four bodies that are constantly changing and transforming into one another, through these processes of coming-into-being and corruption:

These four bodies are fire, air, water and earth: of them fire always rises to the top, earth always sinks to the bottom, while the other two bear to each other a mutual relation similar to that of fire and earth—for air is the nearest of all to fire, water to earth. The whole terrestrial region, then, is composed of four bodies (*I.II.339a11–20*).

²⁸¹ Vladimir Janković, 'Imperfect Mixtures', *Reading the Skies: A Cultural History of English Weather, 1650–1820* (London: University of Chicago Press, 2000), pp.14–32, pp.16–22.

In a more developed reading, Aristotle's theory of exhalations is a way of reconciling the Eudoxan cosmology of concentric layers with Aristotle's anti-Platonic hylomorphism.²⁸² Aristotle does not want to be forced to argue for an immaterial realm of forms beyond this universe, and for this reason, he has to argue against Plato's Theory of Forms and Plato's Realm of Forms. Subsequently, Aristotle advocates for forms that exist as potentialities in matter. The Aristotelian dictum about matter, given in his *Physics*, is thus that 'even if it is numerically one, it is not one in form'.²⁸³ Aristotelian hylomorphism is thus the relation between form thought of as potentiality (*hulé*) and actuality (*eidos, morphé*).

On this account, the Alexandrine commentator Philoponus (490-570AD), in his Neo-Platonic commentary on Aristotle's *Meteorologica*, suggests an Aristotelian substrate of potentiality underlying the actual: 'the body *underneath* the revolving element above is a sort of matter, *potentially* hot, cold, dry and moist [my emphasis]'.²⁸⁴ This substrate of potentiality is the basis of forms in Aristotle's thinking; it '*underlies* as a *substrate* to qualities and *has the potentiality for all* [my emphases]'.²⁸⁵ If we take nothing else from this dense philosophical idea, it should be that Aristotle's theory of potentiality underlies his thoughts about clouds, as a pervasive

²⁸² A few years before publishing the *Meteorologica*, Aristotle published *De Caelo* and *De Generatione et Corruptione*. In these texts he also argues toward a hylomorphic substrate. The theory also appears in his *De Musica* and *Physics VII*.

²⁸³ Aristotle, *Physics*, trans. by Robin Waterfield (Oxford: Oxford World Classics, 1996b), I.VII.190a13.

²⁸⁴ Philoponus, *On Aristotle Meteorology* 1.1–3, trans. by Inna Kupreeva (London: Bristol Classical Press, 2011) p.62; see also: Aristotle, *Met.I.III.340b15–19*.

²⁸⁵ Philoponus, p.62.

concept of his physics of the material world. For Aristotle, cloud forms are actualities that gather from potentialities of the sublunary sphere.

Throughout the *Meteorologica*, Aristotle conceives of clouds as ‘gatherings’, using the term συνίστασθαι (*sunistasthai*) to denote how clouds come into being as actualities of form and matter.²⁸⁶ Συνίστασθαι is the present middle-passive infinitive of συνίστημι (*sunistimi*), meaning: to instantiate, to set together or to constitute. The syllable /συν/ (*sun*) can be rendered as ‘plus’, describing cloud nucleation processes as processes of gathering.²⁸⁷ In Modern Greek, συστήνω (*sustino*), the past imperative of the ancient συνίστημι (*sunistimi*), stemming from the union of συν+ίστημι, carries societal connotations. It means the act of recommending one person to another, and is etymologically allied with συνιστώ (*sunisto*), meaning the act of constituting a state, company or institution.

Where συνίστασθαι denotes this coming-to-be through agglomeration, διακρίνεσθαι (*diakrimesthai*) is the process that undoes that gathering. *Diakrimesthai* means separation. The syllabic unit /δια/ (*dia*) performs as opposing linguistic marker for the diffusion of clouds. It means breaking or dissolving, and can be parsed as διαλύω, meaning parting asunder, undoing a knot, solving a difficulty, or slackening one’s hold. This aspect of Aristotle’s thinking has been frequently visited in critical debates about his opposition to Plato, particularly in their different philosophical

²⁸⁶ Aristotle, *Meteorologica*.

²⁸⁷ I am following Malcolm Wilson in my inclusion of cloud formation within συνίστασθαι: Malcolm Wilson, *Structure and Method in Aristotle’s Meteorologica: A More Disorderly Nature* (Cambridge: Cambridge University Press, 2013). See also ‘*sunkrīsis* gathering *hē tōn nephōn* of clouds’, given by Inna Kupreeva, ‘Greek-English Appendix’, in Philoponus, *On Aristotle Meteorology* 1.1–3, p.130.

positions on our ability to abstract ideas about form.²⁸⁸ Yet the hylomorphic theory is clearly an idea with social underpinnings, as the etymology of the word suggests. Through these social underpinnings, Aristotle's thinking about clouds overlaps with his thinking about Dionysiac gatherings.

Aristotle's *Poetics* have been critiqued for leaving no space for the actual event of a performance, on account of the fact that he theorises theatre as a mere matter of dramatic composition. David Wiles notes the 'Aristotelian closure' of theatre theory, critiquing 'the principle that a play should have a clear beginning, middle and end'.²⁸⁹ However, what appears now as a limited perspective of theatre could also be seen as the by-product of Aristotle's more general philosophy of forms. To reiterate, Aristotle's hylomorphic doctrine posited that all form extends from matter. On these grounds, it is unsurprising that he theorised performance as incapable of deviating from dramatic text or, more broadly, dramatic convention. The unified matter (*hylê*) of a play is a whole, in which the form (*eidos, morphê*) is already written, or as Aristotle writes, 'the plot, as the imitation of an action, should imitate a single, unified action—and one that is also a whole'.²⁹⁰ The poet is the actualizing function of these forms, that is, 'the function of the poet is not to say what *has* happened, but to say the kind of

²⁸⁸ For contemporary inter-related theories of hylomorphism as a relation between actuality and potentiality, see A. N. Whitehead, *Process and Reality: An Essay in Cosmology* (New York: The Free Press, 1969); Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature*, London: Flamingo, 1985); Gilles Deleuze, 'The Actual and the Virtual', trans. by Eliot Ross Albert, in *Dialogues II*, with Claire Parnet (London: Continuum, 2006), pp.112–115: 'Purely actual objects do not exist. Every actual surrounds itself with a cloud of virtual images'. p.112.

²⁸⁹ Wiles, 'The Problem of Space', *Tragedy in Athens*, pp.1–22, p.7.

²⁹⁰ Aristotle, *Poetics*, p.15; see also Malcolm Heath, *The Poetics of Greek Tragedy* (London: Duckworth and Co. 1987), p.137.

thing that *would* happen, i.e. what is possible'.²⁹¹ This leaves space for the social function of theatre gathering in an otherwise formalist literary theoretical text.

Through the language that he uses to describe theatre poetics, Aristotle hence affirms the conceptual association of clouds and psychic digressions from states of normality, already alluded to through the paralleling of theatre and meteorological phenomena in the doctrine of hylomorphism. The following is the Ancient Greek, rendered so as to highlight this parallel:

περὶ ποιητικῆς αὐτῆς τε καὶ τῶν εἰδῶν αὐτῆς, ἣν τινα δύναμιν ἕκαστον ἔχει, καὶ πῶς δεῖ *συνίστασθαι* [constructed] τοὺς μύθους εἰ μέλλει καλῶς ἔξεν ἢ ποιήσιν [my emphasis].²⁹²

Let us here deal with Poetry, its essence and its several species, with the characteristic function of each species and the way in which plots must be *constructed* [sunistasthai] if the poem is to be a success [my emphasis].²⁹³

In the theoretical emphasis placed upon the construction (*sunistasthai*) of plot, Aristotle applies his theory of hylomorphism to theatre, arguing that dramatic gatherings actualise matter into form. Theatre *poiêtikês* (meaning: putting together) is therefore a structuration process of making the poem from a plenum of potentiality. This gathering of potentiality into form

²⁹¹ Aristotle, *Poetics*, p.16.

²⁹² Aristotle, *Aristotle's Ars Poetica*, 1447a.

²⁹³ Aristotle, *Aristotle in 23 Volumes*, Vol. 23, trans. by William Hamilton Fyfe (London: William Heinemann Ltd., 1932), 1447a.

produces the poem—ποίησις (*poiēsis*)—or the fabrication, creation or production.²⁹⁴ That is, for Aristotle, the essence of the art of theatre gatherings is the creative act of putting potential matter together such that an actual form comes into being. On these grounds, the theatre gathering of bodies in a space is metaphysically, conceptually and structurally analogous to the gathering of cloud forms, when the synthesis (σύνθεσιν) of a tragedy of incidents gathers (*sunistasthai*) to produce the soul of tragedy.²⁹⁵

Aristotle's use of the preposition *sun* is underpinned by a metaphysical theory of gathering and dispersing; yet, when one interrogates Aristotle's source texts, these metaphysical theories appear anthropomorphic. Aristotle cites the Ancient Greek philosopher Empedocles (490-430BC) as a source text for the *Meteorologica* (*Met.*1.4.985a21–5).²⁹⁶ Taking inspiration from Anaximander (610-546BC), Pythagoras (570-495BC) and Heraclitus (535-475BC), Empedocles argued that matter forms into phenomena (and disperses again) through processes of Love and Strife.²⁹⁷ For Empedocles, Love and Strife are forces of interaction. Love is what gathers together, while Strife is what separates. This anthropomorphic theory humanises natural forms. As the classicist M.R. Wright has noted, in

²⁹⁴ Inna Kupreeva, 'Greek-English Index', in Philoponus, *On Aristotle On Coming-to-Be and Perishing 2.5-11*, trans. by Inna Kupreeva (London: Duckworth, 2005): '*poiētikos*, producing, efficient (of causes), production, poetic', p.211.

²⁹⁵ For the soul as synthesis (σύνθεσιν), see Aristotle, *Aristotle's Ars Poetica*, 1450a.

²⁹⁶ Wilson, 'The Exhalations', *Structure and Method in Aristotle's Meteorologica*, pp.51–72, p.62.

²⁹⁷ M. R. Wright (ed), *Empedocles: The Extant Fragments* (London: Yale University Press, 1981). For the mobilising dynamic of Love and Strife, see James Luchte, 'Love, Strife and Mind – Empedocles and Anaxagoras', *Early Greek Thought: Before the Dawn* (London: Continuum, 2011), pp.153–162.

Empedocles, the ‘study of human behaviour enables one to understand the nature of the cosmic principles’.²⁹⁸

In light of the anthropological source of Empedoclean theories, Wright notes instances where Aristotle deliberates about his critical relationship to this theory of Love and Strife, taken with and yet wary of its anthropological underpinnings.²⁹⁹ The theory clearly informed Aristotle’s work. The commentator on Aristotle’s text, Laertius, notes that Aristotle thinks of Love as ‘a single soul dwelling in two bodies’—a kind of gathering of souls.³⁰⁰ In the *Eudamonian Ethics*, Aristotle claims that when lovers are drawn together, ‘they form a single intermediary unity’—as if Love brings a single form into being.³⁰¹

Building on Wright’s insight into the underlying dynamic of Love and Strife in Aristotle’s theories of gathering, David Furley cites Aristotle’s *Meteorologica* Book IV (6,383a7-13), where Aristotle describes processes of *sunistasthai*, as suggesting a process of contraction (caused by the departure of ‘the moist’), meaning that in a process of gathering ‘cold squeezes out the hot; the hot takes the moist with it in the form of vapour; the substance contracts and solidifies’.³⁰² This he reads as the approximation

²⁹⁸ Wright, ‘Physics’, *Empedocles*, pp.22–56, p.32.

²⁹⁹ Wright, ‘Physics’, *Empedocles*, p.30-34. Cf. Aristotle, *Metaphysics*, trans. by David Bostock (Oxford: Clarendon Press, 1994), 985a–10, 988a14–16; *Metaph.*, 985a21–29, 1000a26–b12, 1000b1–2, 1075b6–7, 1091b8–12.

³⁰⁰ Diogenes Laertius, ‘Book V: Aristotle (384-322BC)’, *Lives of Eminent Philosophers* (Cambridge: Harvard University Press, 1972 [1925]).

³⁰¹ Aristotle, *Eudemian Ethics*, trans. by Anthony Kenny (Oxford: Oxford University Press, 2011), VII.6.139b31, p.125.

³⁰² David Furley, ‘The Mechanics of the *Meteorologica* IV: A Prolegomenon to Biology’, *Cosmic Problems: Essays on Greek and Roman Philosophy of Nature* (Cambridge: Cambridge University Press, 1989), pp.132–148, p.139.

or affinity between *Meteorologica* Book IV and the biological works.³⁰³ From here, Furley's extended reading of Book IV of the *Meteorologica* firmly situates this text as a prolegomenon to biology. He argues that *Meteorologica* Book IV, is 'primarily concerned with the formation of organic homoimerous tissues', annexing this with the claim that in *De generatione animalium*, Aristotle 'makes use of the language and theories of *Meteor. IV*'.³⁰⁴

I am fascinated to pull this analysis into dialogue with the work that Vladimir Janković has done on Aristotle's *Meteorologica*, as part of his exploration of English enlightenment theories of the climate and weather. In a chapter on Aristotle's theory of exhalations, Janković highlights that Aristotle saw sublunary bodies such as clouds as 'imperfect mixtures', claiming that his perception of imperfection has had a long-standing effect on how meteorological phenomena have been perceived.³⁰⁵ Janković insightfully proffers that Aristotle pointedly avoids addressing the "vagueness" of his theory of exhalations, and that he completely omits discussion of a final and formal cause for meteorological phenomena.³⁰⁶ The point at which this analysis begins to intersect with Furley's contention that Aristotle's meteorological theory is a prolegomenon to biology, is where Janković contrasts the speculative nature of Aristotle's work with the ontological enquiry that Aristotle's commentators brought to bear on his text:

³⁰³ Furley, 'The Mechanics of the *Meteorologica IV*', p.138–9.

³⁰⁴ Furley, 'The Mechanics of the *Meteorologica IV*', p.148. Cf. Aristotle, *De generatione animalium* (II.5.741 b 10-15).

³⁰⁵ Janković, 'Imperfect Mixtures', p.16.

³⁰⁶ Janković, 'Imperfect Mixtures', p.16.

Aristotle addresses these issues [of vagueness and the omission of a final/formal cause] by denying that inductive reasoning (*epagoge*) could yield certainty when applied to the realm of sublunary corruption and change. The best that could be achieved was speculation based on analogy.

[...]

When Hellenistic commentators took up the subject, however, *epistemic* concerns became *ontological*. Theophrastus and Lucretius stated that meteors followed rational order. Seneca argued to the contrary, and Pliny distinguished between regular and accidental meteors. Not only were meteors considered difficult to account for, but that difficulty was now believed to originate in the world, not in the mind.³⁰⁷

Aristotle admits that his work is based on analogy, and that it can at best be seen as a speculative theory of how sublunary forms come into being and disperse again. This speculative theory is drawn from the Empedoclean physics of Love and Strife, a connection that does not trouble the theory whilst only engaging with meteorological phenomena through analogy. However, when this discursive introduction to biology is transposed into an ontological enquiry, what *was* analogy and speculation becomes ecological fact. Hellenistic commentators placed a new emphasis on ontology, being and objective validity in their treatment of Aristotle's text. It is my contention that this crystallised the previously speculative relationship between humans gathering and clouds gathering into a concrete relation.

³⁰⁷ Janković, 'Imperfect Mixtures', pp.16–19.

The new ontological emphases of Hellenistic commentators involved stripping out the Empedoclean undertones of Aristotle's *Meteorologica*. The commentator Philoponus writes:

‘Nor yet are Love and Strife’, [Aristotle] says, the cause of coming to be according to formula, for on his account Love is the cause only of combining and Strife, of separation. [...] art is responsible for assembling them according to formula and combining to a certain degree. Consequently there is something other than Love that is responsible for mixing according to formula, and this is what we call ‘nature’, i.e. the essence of each thing.³⁰⁸

Philoponus attempts to limit the role that Love and Strife have to play in Aristotle's theories of combination and separation. Philoponus wants to delineate physical processes of combination from their anthropological equivalent within the speculative metaphysics of Aristotle. Elsewhere, in his commentary *On Aristotle On Coming-to-Be and Perishing*, Philoponus attempts to purify the gathering of earth, fire, water and air, of the quality of pertaining to the mind. He writes:

So if the soul is from the elements, it will have the same affections as the ones that the elements have; but soul has no bodily affection, such as the ones undergone by earth, water, fire, air – ‘cultured’ and ‘uncultured’, ‘memory’ and ‘forgetfulness’, skills and sciences do not occur in any of the elements; for these are neither bodily affections, nor perceptible. Nor

³⁰⁸ Philoponus, *On Aristotle Meteorology* 1.1–3, 264.9–14, p.55.

again do the properties of the elements occur in the soul – rarity, density, heat, cold, lightness, heaviness or any of what is seen to belong to bodies.³⁰⁹

Philoponus uses the division of body and soul to extract the concept of gathering and separation from its human substrate, located in Empedoclean physics of Love and Strife. The ‘cultured’ and ‘uncultured’ are abstracted from the bodily affections of earth, water, fire and air. For Philoponus properties such as density, heat, cold and heaviness belong to ‘bodily affections’ or to physical matter, not to the soul. Classicist Craig Martin has duly noted that the focus that Early Modern commentator Niccolò Cabeo (1586–1650) brought to Aristotle’s *Meteorologica*, equally placed this text in service of natural philosophy as a field strictly concerned with the physical and the sensible.³¹⁰ These adaptations of Aristotle’s theories sought to strip the Empedoclean dynamic of Love and Strife from the theory of combination and separation. These post-Aristotelian commentators have sought to restrict Aristotle’s συν-compounds to denoting physical processes of gathering.

René Descartes in his engagement with Aristotle’s theories was equally concerned with clarifying what he saw as a blurred boundary between the metaphysical and the physical, the mind and the body, in Aristotle’s works. Descartes’ *The Meteors* (1637) sought to purify theories of meteorological combination and separation by transforming what

³⁰⁹ Philoponus, *On Aristotle On Coming-to-Be and Perishing* 2.5–11, 268.22–30, p.60.

³¹⁰ Craig Martin, ‘With Aristotelians Like These, Who Needs Anti-Aristotelians? Chymical Corpuscular Matter Theory in Niccolò Cabeo’s “Meteorology”’, *Early Science and Medicine*, 11.2 (2006), 135-161 (p.158).

Descartes saw as Aristotle's flawed speculative metaphysical theorem of hylomorphism into a mechanical theory.³¹¹ This is on account of Descartes' contention that, according to Lucian Pretrusca, 'the Aristotelians confuse things that pertain to the mind with things that pertain to the body and thus falsely attribute affections of the mind to material bodies'.³¹² Descartes wished to transpose theories of meteorological combination and separation into mechanical terms so as to rescind the speculative metaphysical content of Aristotelianism.

This shift toward ontology, in the field of meteorology that followed in Aristotle's wake, transposes a theory of form that was drawn from an analogy between human Love and Strife into a mechanistic theory of how physical forms combine and separate. This shines a new light on Aristotle's *Meteorologica* and its position in the conceptual history of the post-1960s tendency to identify clouds with states of chemical vacation from the self. Not only does the language of the *Meteorologica* intersect with the language of the *Poetics*, suggesting that clouds and humans gather and disperse through parallel dynamics. The anthropological theoretical underpinnings of that text, to which Hellenistic commentators were so utterly resistant, suggest that the theory of 'gathering' is not a philosophy of corporeal "things suspended in mid-air", but that these bodily affections exist on account of the inseparability of mind and body in Aristotelian

³¹¹ René Descartes, *The World, and Other Writings*, trans. by Stephen Gaukroger (Cambridge: Cambridge University Press, 1998).

³¹² Lucian Petrusca, 'Cartesian Meteors and Scholastic Meteors: Descartes Against the School in 1637', *Journal of the History of Ideas*, 76.1 (January 2015), 25–45 (p.25).

hylomorphism, as is the contention of Descartes.³¹³ That is, the idea of clouds ‘gathering’ is disclosed through a spiritual register beyond the corporeal. Clouds do not gather because particles come together in the sky and make a cloud. Within Aristotle’s work, clouds are gatherings of the mind, of Love or of spiritual conjugation.

In this respect, I have been equally struck by discovering the relationship between *sunistasthai* (gathering) and *diakrimesthai* (separating) within Aristotle’s text. Under the philological investigation of Malcolm Wilson, Aristotle appears to bring *diakrimesthai* (separating) into play as a stage within the meteorological phase-shift implied by *sunistasthai* (gathering):

The cognate verb **συνίστασθαι** can mean ‘gather’ (I.10.347a27)... More commonly, though, the verb refers to the process by which the wet exhalation turns into rain and other precipitation (though we should be wary of calling it ‘condensation’). The noun, **σύστασις**, by contrast, is never used to describe this process. The verb **συνίστασθαι**, however, can describe the whole gathering process from beginning to end (2.2.354b31) or it can refer to any part of the process: air to vapor, vapor to mist, vapor into a cloud (3.3.372b16), mist to cloud, cloud to droplet (3.4.373b20), droplet to rain.³¹⁴

Wilson begins by suggesting that ‘to gather’ is a verb used to describe how wet exhalations come together. However, the verb is also used to describe how cloud ‘turns into rain and other precipitation’. For Aristotle this water

³¹³ Petrusca, ‘Cartesian Meteors and Scholastic Meteors’.

³¹⁴ Wilson, ‘The Exhalations’, p.65.

cycle is a ‘whole gathering process’. The moment where clouds become rain is the moment when the form of a cloud falls apart and becomes the potentiality of matter once more. This contradicts the superficial observation that συνίστασθαι (gathering) and διακρίνεσθαι (separating) are opposed in the *Meteorologica*. In fact, gathering and separating are reciprocally related because the one is subsumed within the other. This relationship between tearing and forming belies the promise that the Dionysiac holds as a moment of spiritual collectivity. It dislodges the conceptual association of clouds with ideas of spiritual communalism beyond social law, disrupting the idea that clouds can be used to refer to vacations from the self. Rather, the Dionysiac tear is merely another phase-shift in the sublimatory process of social unification.

Through clouds, every act of gathering is always-already an act of separation. This aspect of Aristotle’s text provides a disruptive framework through which to approach the ostensible links between digitality and psychic states of de-sublimation, connoted by clouds. By way of a working example, in 1976, the media theorist Marshall McLuhan wrote a prefatory essay entitled ‘Empedocles and T.S. Eliot’, appended to Helle Lambridis’s commentary on Empedocles’s philosophy of Love and Strife.³¹⁵ Here, McLuhan celebrates the modernist poetics of Eliot as embodying Empedocles’s theory of Love and Strife.³¹⁶ McLuhan argues that ‘[the] ways upward and downward are the same’, or ‘Love, which unites[...] also

³¹⁵ Marshall McLuhan, ‘Empedocles and T.S. Eliot’, prefatory essay to Helle Lambridis, *Empedocles*, Studies in the Humanities, 15 (Alabama: The University of Alabama Press, 1976), pp.vi–xv.

³¹⁶ McLuhan, ‘Empedocles and T.S. Eliot’, p.xii.

destroys[...] and Strife, which creates[...] also makes'.³¹⁷ Citing Empedocles, McLuhan thereby transposes the anthropological theory of natural forms as tearing and forming into the context of digitality, as if this idea holds revolutionary potential within the emerging cultural logic of the network form. Vilém Flusser makes a parallel appeal when he calls on the Ancient Greek theory that form and matter are inseparable (ie, Aristotle's hylomorphism), in order to critique the plausibility of 'immaterial culture'.³¹⁸ Like Aristotle, Flusser argues that form is contained in all matter; hence, he challenges the rhetoric of digital culture as 'immaterial'.

What is key here, is the very fact that Flusser and McLuhan, and likewise, Canguillhem, Vernant, Hardt and Negri, are drawn to Greek culture as a historical moment that can focus critiques of contemporary transmutations toward digitality and digital capitalism. It is important to note that while for a long time critical voices have been using Greek culture to critique digitality, affirmative voices have been using Greek culture to justify it. In the former case, the sorts of Greek practices and theories implied are those associated with the Greek Dionysus, as both a narco-escapist, counter-cultural practice and as a space where the concept of hylomorphism is performed. In the latter case, affirmative voices have compared digitality to the Greek *agora* as if this implies the Internet as a democratising form; implying virtual spaces as discursive, open spaces of exchange.

³¹⁷ McLuhan, 'Empedocles and T.S. Eliot', *doubleness*: p.vii, double truth: p.xiii.

³¹⁸ Vilém Flusser, 'Form and Material', *The Shape of Things: A Philosophy of Design* (London: Reaktion Books, 1999), pp.22–29.

My analysis of the historical association of clouds with these Dionysiac practices suggests that the critical position has been firmly absorbed into the affirmative. The industry of cloud computing draws the cultural aesthetic of social sublimation into the rhetoric of computational social interpellation. More, what is singular to the use of clouds as the icon for this social sublimation is the attribution of an ecological form to call humans into existing within “surplus” or dislocated states of being—a reflex of naturalisation that I will examine in the forthcoming chapter. That is, as a social mechanism, the cloud concept iconographically reinforces and naturalises the idea that humans should be tearing and forming, thereby entering every person into the system, as either an affirmed member of the interior community or form, or as the struck off “zero degree” of marginalised tearing. The cloud concept tears the significations of labour and exploitation that are concentrated in it as an emblem of digitality. In their place, the cloud concept does not provide a new social medium for gathering. It pertains to relate to the ecology, but it is better seen as recourse to a set of ideas about who is permitted into acts of social union. Every act of gathering is always-already an act of social separation.

Whilst urging norm conformity through covert threats of expulsion can follow literal acts of exoneration, as noted by Kipling Williams, the subtleties of ostracism implied by the concept-being of clouds are much more coercive, such as the disenfranchisement or interdiction of social beings from social life.³¹⁹ Marx writes of the presupposed ‘complete separation’ of labourers from all property, stating that capitalist production

³¹⁹ Kipling Williams, *Ostracism: The Power of Silence* (New York: Guilford Publications, 2001).

‘maintains this separation[...] reproduces it on a continually extending scale’.³²⁰ The continually extending scale of separation applies to the separation of bodies from a fabricated and productive idea of the “human,” into the embodiment of capital resource, disclosed through covert processes of disenfranchisement. Love and Strife are instrumental in binding the human to these processes through the conceptual history of clouds as spiritual or orgiastic gatherings. That the critique of these processes can be achieved though unfolding the deep history of the concept of gathering in clouds implies that any critical emphasis on separation must continually be met with the interrogation of its inverse, and the symbolic field or locale of that inverse, not simply the idea of social union or sameness, but the figures and imagery of forming—that metaphorical register of the social gathering which veils the implicit operations of capital abstraction and accumulation.

³²⁰ Marx, *Capital*, vol. 1, p.502 (pt.8, ch.26).

Chapter Two: Pockets

Thought is not entirely the underpinning of thought. In other words: thought does not belong completely to itself; or, there is a central void in thought, a characteristic zone of collapse (that it uses all its strength to mask) that at the same time limits its self-appropriation from the inside and ceaselessly renews the movement of self-conquest from outside.³²¹

Alessandro Delcò, Matthew Tiews and Trina Marmarelli—‘Michel Serres: Philosophy as an Indeterminate Essence to be Invented’

Clouds in the present serve a paradigmatic function. Through the production of their concept-being, clouds are everywhere being laboured as cultural signs with emblematic capacities that extend across computational media and outwards into art and theory. This chapter seeks to understand how the concept-being of clouds has been input into a machinic construct, thereby mechanising their signifying functions through the logic of sameness and reproducibility. That is, this chapter tells the deep history of mechanising clouds as signs. This is first established in work of late twentieth-century theorist Michel Serres (b.1930). Serres generates clouds as topological figures in his work, which come to facilitate the absorption or conquest of material into what I see as his generalised theoretical move to informationalise matter.

³²¹ Alessandro Delcò, Matthew Tiews and Trina Marmarelli, ‘Michel Serres: Philosophy as an Indeterminate Essence to be Invented’, *Configurations*, 1.2 (Spring 2000), 229–234 (p.233).

This function of clouds as signs recapitulates the nineteenth-century orientalist reading (via textual mechanics of annotation and absorption) of the Sanskrit poem *Megha-dūta* or ‘cloud messenger’, and the subsequent Western visitations, to consecrate the figure of the cloud in that text. The writers engaged in these representative circuits do not use clouds as images or metaphors, but rather mechanise clouds as aesthetic-sign-functions. From here the chapter turns to reflect on the heavily laboured Early Modern stage architecture of ‘cloud machines’. Early Modern artists and stage architects used clouds to produce the spectacle sometimes known as the *deus ex machina*, involving the delivery of a deity or deific form onto the stage space. The ‘cloud machine’ hence masks a complex concatenation of human and machine labour needed to lift wood, actor and scenery into their deific presentation onstage.

Arguing through these works I suggest that making clouds into signs involves twin processes of abstraction and association. Abstraction extracts the surplus-value of labour from the debased nexus of production, while association asserts that congruence of force, productivity and movement as the spectacle of clouds. Counterintuitively, then, through the mechanised signifiatory function involving twin processes of abstraction and association, the paradigm of clouds-as-signs maps onto the twin capitalist processes of abstraction and accumulation, or the patterning of life into forms of vital energy. The life that is gathered together and transformed into the spectacle of digital capital is transfigured as if being input into a machine for producing aesthetic signs. The concept-being of clouds embody and embolden that machine. They re-route the spectre of capital through

ecological form, shrouding their own mechanical qualities even as they do so.

One of the primary springboards for the analytical framework of this chapter has been Marxist theorist and poet, Franco ‘Bifo’ Berardi (b.1949), who has firmly positioned signifiatory functions within the critique of capital. In *The Uprising: Poetry and Finance* (2012), Berardi contextualises the virtualisation of the economy in an age of finance by alluding to the poetic strategies of symbolist poets Paul Verlaine, Arthur Rimbaud and Stéphane Mallarmé. Rimbaud, writing to Paul Demeny celebrated the poet-figure as a ‘seer’, appraising the poet’s capabilities as: ‘*dérèglement de tous les sens* [derangement of all of the senses].³²² Poetry can derail the senses, unmaking or disarranging rule—to follow the various French conjugations.³²³

For Berardi, a virtualised economy involves the exchange of symbolic numbers and figures that have been disassociated with their physical referents. Finance is an abstracted economy: it is difficult to connect the decimals of economic transfer to the materials of human labour and natural resources to which they ultimately refer. Hence the production of life into forms of digital capital is a form of symbolist poetry, involving the dereferentialisation or derangement of the senses. In this vein, digital media re-discloses capital as a purely symbolic or grammatological operation. Life becomes the constitutive act of swapping one syntactical

³²² Arthur Rimbaud, *Lettre dite Du voyant: à Paul Demeny du 15 Mai 1871* (Paris: Messein, 1954)

³²³ My thanks to Kéline Gotman for conjugating ‘dérégler’.

unit for another, or of exchanging numbers for numbers, words for words, which makes up the very body of a globalised capitalist society.

Berardi terms this logic of symbolic exchange ‘semio-capitalism’—a useful expression, though in need of some grounding. Semio-capitalism is best seen as continuing David Harvey’s revitalisation of Marx’s theory of primitive accumulation with the theory of accumulation by dispossession.³²⁴ Where Marx describes the transition from feudal society to capitalist society as the supersession of exploitative socioeconomic structures, he calls this process the ‘separation’ or ‘divorcing’ of workers from their means of production. This ‘separation’ transforms the labourer into a waged worker through land appropriation and via the transformation of any social means of subsistence into the bedrock of economic exchange.³²⁵ Harvey’s concept of accumulation by dispossession revitalizes this theory of transformation—depicting it not as a process that precedes capital, nor as a discrete moment in the history of economic relations, but as the process that sustains capital in its every present.

Separation, divorcing and dispossession are hence associated processes not only in the historical aversion of the crisis of feudalism between some nominal period between 1450–1650, where power-relations between workers and masters shifted their dimensions toward a new social-economic system, but also in the daily sustenance of a capitalist economy through the subjection of all modes of productivity to the machinic logic of

³²⁴ Harvey, *The New Imperialism* (2003).

³²⁵ Marx, *Capital*, vol. 1 (pt.8, chs.26–33).

M–C–M’.³²⁶ In Volume One of *Capital*, Marx argues that M–C–M’ is the process by which money is turned into commodities and transformed into money once more.

Value is accrued from the surplus value that is extracted from the concatenation of human and machine labour. This extraction of value is foundational to the process of capital production.³²⁷ By turning to French Surrealist poetics, Berardi adds dereferentialisation and abstraction to this list of associated processes, as if *dérèglement* has been historically transformed from poetic into economic trope. Mediated through digitality, the economist poetics of M–C–M’ involves the symbolist strategy of tearing signifiers from their material referential bases. This is tantamount to the process of accumulation by dispossessing, because it involves separating or divorcing labourers from their means of production.

The industry of cloud computing is a mediating domain of this capitalist poetics of tearing. The work of Sean Cubitt is informative in this respect, as he relates Berardi’s research into economic virtualisation to the sorts of abstractions that are at play in the rhetoric of digitality as a virtual or immaterial domain, arguing ‘[in] semiocapitalism, the major form of production is no longer of goods but of symbols’.³²⁸ This is specifically relevant to the production of clouds as symbols, as a poetic strategy of the working concept of clouds. Clouds are symbolic domains of capital, and information networks are one of many overlapping contexts for this

³²⁶ Silvia Federici, ‘Accumulation of Labor and Degradation of Women: Constructing “Difference” in the “Transition to Capitalism”’, *Caliban and the Witch*, pp.61-131; Marx, *Capital*, vol. 1 (pt.4, ch.4).

³²⁷ Marx, *Capital*, vol. 1 (pt.4, ch.4).

³²⁸ Sean Cubitt, ‘Decolonizing Ecomedia’, *Cultural Politics*, 10.3 (2014), 275–86 (p.277).

symbolist praxis. Cubitt, in his book *Finite Media* (2017), argues that the very idea of abstract or virtual ‘media’ serves to mediate, and abstract, the very real mediation of virtuality through the burning of coal, the use of natural and human resources and labour.³²⁹ Digitality liquidates capital into semio-capitalist forms, potentially occluding the material realities of degradation and waste. Hence, rather than looking only to the valorisation of computational media as an abstract domain, it is vital to be alert to the instantiation and implication of the more generalised tendency to transform things into symbols, such as in the cultural wordplay of clouds as signs.

For the purposes of this chapter, I will argue that semio-capitalism allows for the use of ecological forms as conceptual forms that mediate the transformation of nature and life into capital. The symbolic content of capital involves reframing ecological forms as concepts, in order to verify, validate and sustain ideological systems of accumulation by dispossession. Counterintuitively, this means that symbolic capital involves grounding ecological abuses in the ecology. This provides a refreshed perspective on cultural complicity in digital capitalist mechanisms of accumulation by dispossession, and the role of symbolic strategies in these tactics of complicity. The term semio-capitalism suggests to me concept-based forms of complicity in the thought project of semio-capitalism. If capitalist ideologies are executed in torn semantics, we do not need to be bankers or stock exchangers to be complicit in its execution. We merely have to think in and operate on the torn semantic terms of a set of de-regulated concepts.

³²⁹ Sean Cubitt, *Finite Media: Environmental Implications of Digital Technologies*, A Cultural Politics Book, ed. by John Armitage, Ryan Bishop and Douglas Kellner (Durham, NC: Duke University Press, 2017).

Therefore this chapter is about the complicity that we have in the global industry of cloud computing as an ideological mainframe of digital capitalism, simply by conceiving of clouds in a certain way. It is about how the concepts we associate with clouds actually serve to disassociate us from the ecology upon which they appear to be contingent, and within which we are equally as contingently embedded. Hence, in this chapter I am thinking of the cloud concept as an epic eco-poem that makes the ecological forms of clouds subservient to an invented conceptuality serving the ends of capital. We know the central conceit of this poem by heart. It is recited on a daily basis, in the quotidian rhythms of tapping a cloud icon with the end of a thumb. Behind these acts, supercomputers are using energy and producing at least 2% of global carbon emissions.³³⁰ These acts render legible our instantaneous complicity in the idea of a virtual information network, the abstracted domain of symbolic exchange. Hu further tangles this knot of complicity by criticising the necropolitics of remote computational social relations, explaining how a network infrastructure facilitates anonymised and one-directional relations of control, passing the sovereign power to decide who lives and who dies through a de-contextualised and de-humanised architecture of information exchange.³³¹ Hu identifies clouds as vehicles for these oppressive structures:

³³⁰ Bryan Walsh, 'Your Data is Dirty: The Carbon Price of Cloud Computing', *Time* (2 April 2014), available online <<http://time.com/46777/your-data-is-dirty-the-carbon-price-of-cloud-computing/>> [accessed 18 April 16].

³³¹ Hu, *A Prehistory of The Cloud* (2015). Cf. Mbembe, 'Necropolitics'.

the cloud[...] turns human labor into a resource[...] making it possible to hire Bengladeshi workers to solve one thousand CAPTCHA problems, those “enter a word in the picture here” forms that verify a user is human, for less than \$1.50 a batch.³³²

These disposable subaltern workers are interpellated into precarity through cultural complicity in the production of the concept of clouds. This complicity is marked by the linguistic assumption of some natural affiliation between the definite article “the” and “cloud.” In the introduction to *Regulating the Cloud: Policy for Computing Infrastructure* (2015), Information Studies theorist Jean-François Blanchette uses the terms ‘the Cloud’ and ‘cloud ecosystem’ interchangeably, particularising clouds as the globalised technology infrastructure that is the focus of this publication on policy and market regulation.³³³

The introduction precedes a chapter from Weinman, where he builds on his book-length publication *Clouconomics*, re-writing what the word “cloud” means, through the mnemonic C.L.O.U.D. (Common infrastructure, Location independence, Online accessibility, Utility pricing, on-Demand resources).³³⁴ These theorisations of what clouds “are” subtly obscure an

³³² Hu, ‘Conclusion’, pp.145–48, p.146.

³³³ Yoo and Blanchette, *Regulating the Cloud* (2015).

³³⁴ Joe Weinman, ‘Cloud Strategy and Economics’, *Regulating the Cloud*, ed. by Yoo and Blanchette, pp.21–60; Weinman, *Clouconomics* (2012). Weinman clarifies the mnemonic twice in this publication under the telling chapter subtitles: ‘Cloudy Forecast: Clarifying the Cloud’, pp.1–16, p.11, and ‘What is a Cloud?: Defining the Cloud’, pp.63–76, p.65. Weinman originally coined the term ‘clouconomics’ in the article ‘The 10 Laws of Clouconomics’, *GigaOM*, 7 September 2008, available online <<https://gigaom.com/2008/09/07/the-10-laws-of-clouconomics/>> [accessed 29 March 2016].

operation of primitive accumulation.³³⁵ In a subsection titled ‘Capacity Inertia’, Weinman writes:

So, human resources are not that different from other resources when it comes to increasing or decreasing “capacity.” Some businesses do not have these constraints: In employment at will, in many cases for day labourers such as, say, some construction work or farmwork, a truck picks up as many workers are needed that day [sic], with no commitment and no complex skills evaluation or worker selection. This, of course, is not fixed capacity, but on-demand capacity acquired from the “labor” cloud.

[...]

In short, fixed capacity is problematic, driving an imperative to use the cloud.³³⁶

In “cloudonomics,” humans and natural resources alike pass through a rhythm of surplus and under-development in order to sustain the logic of production and recuperation, accruing wealth through the poetics of M–C–M’. Weinman’s phrasing ‘the “labor” cloud’ is tremendously suggestive in this regard, as he attributes the strategies of “cloudonomics” to the demands of the ecology. These demands are always prefaced by definite articles, and formulated in sentences that are both declarative and imperative. Under the law and order of “cloudonomics,” clouds are machines that make varying demands on labour. As if clouds have “on-demand” capacities for a workforce. As if clouds will not abide inertia in the workplace. As if clouds

³³⁵ Weinman, ‘Preface’, pp.xv-xx, p.xvii; ‘Capacity Conundrum’, pp.125–136, pp.134–5.

³³⁶ Weinman, ‘Capacity Conundrum’, pp.125–136, p.134–5.

re-shape sleep into work—casualise, dehumanise, manage and control, automate and outsource.

This grammatology of “cloudonomics” manifests as the precarity of living under the logic of capital. Every life realises the semantics of “cloudonomics.” Such lived precarity ensures that labour structures map onto the so-called “capacity demands” of capital, so that no one person exists in a state of “inertia” (i.e., that no person is paid to subsist/exist when their employer does not call upon them to do so). Literally defining “what clouds are” with the term ‘the “labor” cloud’, Weinman is able to close exploitation within the working concept of clouds. That is, “cloudonomics” is a circular theory that virtualises exploitative operations, first into a sociotechnical infrastructure, then into an eco-philosophical procedure. Weinman proceeds towards the “truth” of clouds through this eco-poetics of philosophical language, seeking to pin down what clouds truly are.

Ecological clouds are thus used as a poetic mediator of what Nixon has termed the ‘slow violence’ of global environmental structures of oppression.³³⁷ Clouds are used to naturalise precarity, as if living subject to precarious financial conditions is somehow “closer to nature” because precariousness is lived “inside the clouds”. The implied primitivism is at play in Martinez-Alier’s influential concept of ‘the environmentalism of the poor’.³³⁸ Writers such as Martinez-Alier, Klein, Federici, Tadiar, Pellow and Brulle and have assessed the fact that environmental policy-making has been used to platform the global imbalance of civil rights and social justice, primarily allowing America and Europe to proceed with industrial and

³³⁷ Nixon, *Slow Violence* (2011).

³³⁸ Martinez-Alier, *The Environmentalism of the Poor* (2002).

economic expansion, all the while seeming more environmentally friendly by outsourcing violent and harmful processes of production to the global South.³³⁹

The global North has used the global South as a carbon offset. This global relationship of dispossession imposes borders between outsourced margin and prosperous centre, while naturalisation encourages the perception of these borders as organic orchestration. I thus think here of the work of eco-feminist critic Greta Gaard, who notes that in the discourse of otherness ‘racism, classism, and sexism are interconnected[...] forms of human oppression and the oppressive structures of speciesism and naturism’.³⁴⁰ Naturalisation is an inherent form of oppression seeking to re-route structures of oppression through “natural” difference.³⁴¹

From this view, the ecological referent of clouds as an instrument of naturalisation recapitulates the historical discourse of otherness. Hence, disassociation and naturalisation, which I am here also terming abstraction and association, are reciprocal dynamics that co-produce clouds as circuits of symbolic capital through which not only accumulation by dispossession

³³⁹ Martinez-Alier, *The Environmentalism of the Poor* (2002); Klein, *This Changes Everything* (2015); Federici, ‘Feminism and the Politics of the Common in an Era of Primitive Accumulation (2010)’; Tadiar, ‘Life-Times of Disposability within Global Neoliberalism’; Naguib Pellow and Brulle (eds), *Power, Justice and the Environment: A Critical Appraisal of the Environmental Justice Movement* (2005).

³⁴⁰ Greta Gaard, ‘Toward a Queer Ecofeminism’.

³⁴¹ Gaard, ‘Toward a Queer Ecofeminism’; Val Plumwood, ‘Androcentrism and Anthrocentrism: Parallels and Politics’; Salleh, *Ecofeminism as Politics* (1997); Federici, ‘Accumulation of Labor and Degradation of Women’; Robinson, *Black Marxism* (1983); Patterson, *Slavery and Social Death* (1982); Melamed, ‘Racial Capitalism’; Singh, ‘On Race, Violence and So-Called Primitive Accumulation’.

is mediated, but also the new ecological morality of capital, or the spectre of the “common” good at the heart of environmental justice politics.³⁴²

Critical medial theorists of computational media are equally tied up in these processes of abstraction and naturalisation. In *The Marvelous Clouds: Toward a Philosophy of Elemental Media* (2015), John Durham Peters attempts to separate clouds as computational media from ecological clouds by using speech-marks “...” where he writes of digitality.³⁴³ Peters subtitles a section on the ecology ‘Clouds’, where he separates clouds in art from real clouds.³⁴⁴ Sentences that begin ‘For Percy Bysshe Shelley’ and ‘For Constable’ contrast several declarative sentences that structure the page into assertions ‘Clouds are’, ‘Clouds pose’ and ‘Clouds exist’.³⁴⁵ Through Peters’ style, the theorists that he engages with are often embedded in these declarative sentences, in a manner that frees their theory from the historical conditions of its production.

Most notably, Peters writes, ‘Clouds are “bodies without surfaces”—a concept Damisch takes from the notebooks of Leonardo da Vinci, who argued that painting should include such elusive objects as ash, mud and

³⁴² The Invisible Committee, ‘The Environment is an Industrial Challenge’, pp.28-33; Federici, ‘Feminism and the Politics of the Common in an Era of Primitive Accumulation (2010)’.

³⁴³ See for example Durham Peters, ‘Introduction: In Media Res’, pp.1-12, p.1; ‘Understanding Media’, pp.13-52, p.23. In the index, Peters separates a catalogue of entries under ‘cloud, the’, under which he lists ‘in digital rhetoric’ and ‘as God’s habitat’, and ‘clouds’, under which he uses constructions such as ‘fractal quality of’, ‘of ink’ and ‘muteness of’, p.399.

³⁴⁴ Durham Peters, ‘The Times and the Seasons: Sky Media II (Kairos)’, pp.213-260, pp.254-60.

³⁴⁵ Durham Peters, ‘The Times and the Seasons: Sky Media II (Kairos)’, p.256.

clouds’.³⁴⁶ The self-aware prepositions that precede the names of the artists Constable and Shelley highlight the circularity between Damisch’s theories of clouds and how clouds are theorised. Peters declares Damisch’s theories as the nature of clouds. In Peters’ work, theorists such as Damisch become parenthetical to their theorisations of clouds.

The unquestioned assimilation of clouds with technology and marketing tools is reconfiguring how we think and speak of these ecological phenomena, revising what we mean by “clouds” and placing a new emphasis on the “real” of clouds.³⁴⁷ As in Peters’ work, this is discernible in graphological markers intended to delineate ecological clouds from the infrastructure of the data centres, hard drives, fibre optics, wires, cables and user interfaces, described by technology corporations when they speak of clouds.

To this end, Metahaven’s Daniel van der Velden and Vinca Kruk’s criticism of clouds, is notable not for the thoroughness of their deconstruction of computational media and digitality, but for their consistent stylistic tendency to contextually particularise clouds solely through their conceptualisation by technology corporations, through the use of the definite article “the”, often coupled with capitalisation, when writing ‘The Cloud’.³⁴⁸

³⁴⁶ Durham Peters, ‘The Times and the Seasons: Sky Media II (Kairos)’, p.256.

³⁴⁷ Dom Nicastro, ‘Do Smaller Companies Dream of Marketing Clouds?’ (30th July 2015), available online <<http://www.cmswire.com/digital-marketing/do-smaller-companies-dream-of-marketing-clouds/>> accessed 30 March 2017].

³⁴⁸ Hu, *A Prehistory of The Cloud* (2015); Metahaven, ‘Captives of the Cloud: Part I’, *e-flux* 37 (September 2009), Metahaven, ‘Captives of the Cloud: Part II’, *e-flux* 38 (October 2012), and Metahaven, ‘Captives of the

Disassociation is one way of describing how the concept of clouds has become torn from its ecological and referential basis. Disassociation is a useful way to realise that this act of tearing has rendered the concept of clouds capable of masking over the mechanism of abstraction implicit in how it uses human life and natural resources. Yet disassociation works hand in hand with naturalisation—whereby a disconnected concept is reasserted as ecological, as natural, as environmental. I will shortly turn to the 1960s and 1970s work of Michel Serres (b.1930). Serres is a French philosopher whose experimental style of writing has to be situated against the backdrop of emerging cultures of digitality, and the countercultural movements in which these were embedded.

In Steven Connor's extended close reading of Serres, he argues that the philosopher is a topological thinker for whom disciplines are morphologically contiguous and continuous with one another, rather than discrete domains of thought.³⁴⁹ In particular, Connor argues that in Serres' 60–70s works 'a cognitive space in which culture and science might meet is being predicted, prepared, projected'.³⁵⁰ Once projected this 'space' is put to work, as a topological form used by Serres to transgress boundaries and fields. Looking to where Serres begins preparing this 'space', there are several instances where Serres is found to be preparing a corresponding

Cloud: Part III. All Tomorrow's Clouds', *e-flux* 50 (December 2013), available online <<http://www.e-flux.com/journal/captives-of-the-cloud-part-i/>> <<http://www.e-flux.com/journal/captives-of-the-cloud-part-ii/>> <<http://www.e-flux.com/journal/captives-of-the-cloud-part-iii-all-tomorrows-clouds/>> [accessed 29 March 2016].

³⁴⁹ Steven Connor, 'Topologies: Michel Serres and the Shapes of Thought', available online <<http://www.stevenconnor.com/topologies/>> [accessed 14 August 2014].

³⁵⁰ Connor, 'Topologies: Michel Serres and the Shapes of Thought'.

concept of clouds. I am going to interrogate Serres' preparation of this thought-space as the mechanisation of clouds as signs, critiquing his work through reading his books as writing machines that input clouds into the machinic logic of abstraction and association.

Informationalisation, or Clouds in Michel Serres

Serres' earliest publications comprise his *Hermes* series, a five-volume work. It is generally established that Serres uses the Greek messenger-god Hermes to figure the transgression of boundaries and the movement between different zones of thought in this five-volume corpus. However, I would also claim that the collection provides insight into clouds as topological, thermodynamic, atomistic forms. I am interested to begin with the following passage, as I think here we find the intersection of Serres' use of cloud imagery and his move toward topology:

Look at Turner's *The Burning of the Houses of Parliament* of 1835. At the bottom right, the *Durande* tows a barge almost in place of the signature. And once again the world is its image, its reproduction, in a precise sense. Turner sees the world in terms of water and fire, as Garrard saw it in terms of figures and motion. Believe me, a ship is always a perfect summary of notions of space and time—of space, of time, of work, as they are at the time—of history. Thus London and the Thames, as well as the steam engine. The conflagration divides the cold canvas in two: half is in the atmosphere and half is reflected in the water. An axis of roaring fire is

projected onto a green mass. On the balance sheet: furnace, water, hot and cold, matter in fusion, line abandoned in favor of random matter, without definition, statistically grouped in parcels. On the one hand clouds of ice, on the other clouds of incandescence. Carnot, almost Maxwell, *almost Boltzmann*. Turner understood and revealed the new world, the new matter. *The perception of the stochastic replaces the art of drawing the form.*

Matter is no longer left in the prison of the diagram. Fire dissolves it, makes it vibrate, tremble, oscillate, makes it explode into *clouds*. From Garrard to Turner, or from the fibrous network to the hazardous cloud. No one can draw the edge of a cloud, the borderline of the aleatory where particles waver and melt, at least to our eyes. There a new time is being fired in the oven. On these totally new edges, which geometry and the art of drawing have abandoned, a new world will soon discover dissolution, atomic and molecular dissemination.³⁵¹

There is a small but considerable error in the first sentence of this passage from Serres. Serres uses the imperative ‘Look’ to position his reader in front of ‘Turner’s *The Burning of the Houses of Parliament of 1835*’. ‘Turner’ is of course the Romantic English landscape painter Joseph Mallord William Turner (1775–1851), however, there is no such painting as ‘Turner’s *The Burning of the Houses of Parliament of 1835*’. The so-called painting *The Burning of the Houses of Parliament* is Turner’s work, though it was painted by Turner between the years 1834–5, and, rather than being subsumed in water, steam and fire, it depicts a clearly legible crowd

³⁵¹ Michel Serres, ‘Literature and Science: Turner Translates Carnot’, Trans. by Marilyn Sides, *Hermes –Literature, Science, Philosophy*, ed. by Josué V. Harrari and David F. Bell (London: The Johns Hopkins University Press, 1982), pp.54–64, pp.57–8.

standing before the Houses of Parliament, which are ablaze in the background. Working from pencil sketches of the fire, Turner produced two finished works under this synonymous title, and a related watercolour.³⁵² Judging by the date of 1835 and Serres' description of the boat in the bottom right-hand corner, Serres means to refer us to *The Burning of the Houses of Lords and Commons, October 16, 1834* (exhib. 1835).

Collapsing the duplicity of these works into one erroneously dated title, Serres overlooks the real events that sparked Turner's preparatory pencil sketches. On October 16, 1834, three day-labourers, Joshua Cross, Patrick Furlong and Kirby, were contracted by the Exchequer to dispose of an archive of dented and shattered wooden sticks.³⁵³ These labourers spent the day burning these sticks in furnaces in the basement of the Houses of Parliament. This fire became uncontrollable, starting the blaze that Turner depicts. The sketchbook that Turner had in his pocket that day contains hurried pencil outlines of the smoke rising from the fire, smudged with a finger, alongside detail of the boat, the crowd (tens of thousands of people) and the bridge. The blank pages at the front of the sketchbook suggest the

³⁵² Turner also painted *Destruction of Both Houses of Parliament by Fire* (c.1835) and *The Burning of the Houses of Parliament* (c.1834–5), two watercolours. Similar watercolours can be dismissed as depictions of the burning Tower of London. See Matthew Imms, 'Fire at the Grand Storehouse of the Tower of London 1841 by Joseph Mallord William Turner', catalogue entry, April 2014, in *J.M.W. Turner: Sketchbooks, Drawings and Watercolours*, ed. by David Blayney Brown, Tate Research Publication, September 2014, available online <<https://www.tate.org.uk/art/research-publications/jmw-turner/joseph-mallord-william-turner-fire-at-the-grand-storehouse-of-the-tower-of-london-r1148241>> [accessed 21 April 2016].

³⁵³ Labourers detailed in Caroline Shenton, 'Thursday, 16th October 1834, 7 a.m.: Novelty, novelty, novelty', *The Day Parliament Burned Down* (Oxford: Oxford University Press, 2012), pp.22–39, p.22.

haste with which it was pulled from his pocket to sketch, as does the smudge of the finger to describe the smoke.³⁵⁴

It is unlikely that Turner and his contemporaries were immediately aware of the full significance of this moment. The “kindling” for this fire was a pile of debtor-creditor nick-sticks, or tally sticks. These sticks were being burned because the tally office of the Exchequer was devolving to make space for a new Bankruptcy Court.³⁵⁵ A tally stick was the mainstay of socioeconomic relations of debt and was used globally in pre-modern societies where debtor and creditor would split a wooden stick into two halves, each half indented with a credit note.³⁵⁶ As David Graeber has noted, the act of physically notching a dent in a tally stick is the material substrate of the word ‘indenture’.³⁵⁷ Caroline Shenton adds that, in Britain, the words ‘cheque’ (from the Latin *chacia* or *scacchia*) ‘stock’ and ‘stockholder’, the phrase ‘tallying up’, and the transactional term ‘foil’ and ‘counterfoil’, are equally rooted in the tally stick economy that was formally

³⁵⁴ Joseph Mallord William Turner, *Burning of the Houses of Parliament* (2) Sketchbook, Turner Bequest CCLXXXIV (1834).

³⁵⁵ Caroline Shenton, ‘Thursday 16th October 1834, 6 a.m.: Mr Hume’s Motion for a New House’, *The Day Parliament Burned Down* (Oxford: Oxford University Press, 2012), pp.5–2, p.15.

³⁵⁶ David Graeber, ‘The Middle Ages (6000 AD–1450 AD)’, *Debt: The First 5,000 Years* (London: Melville House, 2014), pp.251–306.

³⁵⁷ Graeber, ‘The Middle Ages (6000 AD–1450 AD)’, note 52 to chapter 10: ‘Similar things [to early Medieval China] happened in England, where early contracts were also broken in half in imitation of tally sticks: the phrase “indented servant” derives from this practice, since these were contract laborers; the word actually derives from the “indentations” or notches on the tally stick used as a contract’., p.443. Cf. William Blackstone, *Commentaries on the Laws of England*, vol. 1, a new edn. (Philadelphia: J. Grigg, 1827), p.218.

abolished in 1783 and ceased to be practiced in 1826.³⁵⁸ Graeber also notes that tally sticks were followed by a system of tearing paper contracts and paper bonds: one torn paper half for the debtor, another for the creditor.³⁵⁹ This transition from stick to paper to linguistic convention emblematises the gradual demise of the tally stick economy, the virtualisation of the economy and the centralisation of monetary power. In Britain, the economy was centralised through documents, ledgers and records that eventually served to supplant the sticks as an archive of debt.³⁶⁰

Turner's painting indexes this history of economic virtualisation. In light of the emphasis that Serres places on shifting paradigms, epistemological ruptures, and 'the new world', the oversight of this indexical role emphasises the lack of space for lacks, errors, events and ruptures, within his theory of topological form. Indeed, the whole passage seems to me to work through the interplay between paradigmatic generalities. The phrasing 'Carnot, almost Maxwell, *almost Boltzmann*', condenses events in history of science (signalled by physicists Sadi Carnot (1796-1832) and James Clerk Maxwell (1831-1879), who were both instrumental in the early theorisation of thermodynamics) and in social theory (given in the shorthand of the physicist and philosopher Ludwig Boltzmann (1844-1906), who was instrumental in the application of

³⁵⁸ Caroline Shenton, 'Thursday, 16th October 1834, 9 a.m.: 'Worn-out, worm-eaten, rotten bits of wood', *The Day Parliament Burned Down* (Oxford: Oxford University Press, 2012), pp.40-57, p.52-53

³⁵⁹ David Graeber, 'The Middle Ages (6000 AD–1450 AD)', *Debt: The First 5,000 Years* (London: Melville House, 2014), pp.251-306, p.269

³⁶⁰ Eric G. Swedin and David L. Ferro, 'Before Computers', *Computers: A Life Story of Technology* (Baltimore: Johns Hopkins University Press, 2007), p.1-24, p.6

statistical mechanics to social bodies).³⁶¹ The erroneous citation of Turner's work equally suggests a process of condensation, a kind of compression or a density of words.

Serres' stylistic compression is not about the subject under analysis but about preparation of a new cognitive space. This density of writing suggests, in accordance with John Limon, that Serres is attempting to structure his style of writing through the Foucauldian anti-method of genealogy.³⁶² Serres' dense text appears to me intended to evoke epistemic and historical events and movements. He compounds his theory of topology into a style of writing, using the colon so as to produce a high-energy composition.³⁶³ This use of the colon compels the reader through his sentences, where a repetitious rhythm of proper nouns brings phrases to cyclically overlap. This swell of language is designed to make Serres'

³⁶¹ Chapter 5, note 2 (from the editors): 'James Clerk Maxwell (1831-1879) was a pioneer in the use of statistical methods in treating the stochastic behavior of molecules[...] for Ludwig Boltzmann (1844-1906), statistical analysis and the theory of probability came to be seen more as rules for the logic of the whole world[...] the statistical law that governs large populations'. p.58. See also chapter 3, note 3 on Carnot's principles of thermodynamics, in Michel Serres, 'Michelet: The Soup', Trans. by Suzanne Guerlac, *Hermes –Literature, Science, Philosophy*, Ed. by Josué V. Harrari and David F. Bell (London: The Johns Hopkins University Press, 1982), pp.29-38, p.34. Cf. Sadi Carnot, *Réflexions sur la puissance motrice du feu: et sur les machines propres à développer cette puissance* (Paris: Bachelier, 1824)

³⁶² John Limon, 'Toward a disciplinary intellectual history', *The Place of Fiction in the Time of Science: A Disciplinary History of Scientific Writing* (Cambridge: Cambridge University Press, 1990), pp.1–29, pp.14–16. Cf. Michel Foucault, 'The Human Sciences', *The Order of Things: An Archaeology of the Human Sciences*, Ed. by R. D. Laing (London: Tavistock Publications, 1970), pp.344–386, pp.364–65.

³⁶³ My understanding of the use of the colon, to produce a high-energy composition on the page, has been informed by the poetic theories of American Black Mountain College poet Charles Olson (1910-1970). See: Charles Olson, 'Projective Verse', *Selected Writings of Charles Olson* (New York: New Directions Press, 1966), pp.15–26.

theory feel randomized and non-linear. The unconventional use of punctuation signifies to the reader that laws or rules of space and time have been overthrown. However, rather than unfolding the epistemological conditions of both science and art in history, Serres retroactively reads thermodynamics into Turner. Serres' theory of topology, or even, the topology of his theory—since style and subject are so closely linked in this passage—works as a de-historicising and de-contextualising driver of his work.

In this vein, Serres rejects linearity and historical fact to such a degree that his works are dogged by the tyranny of anti-linearity. Connor terms this 'the monism of the manifold' or a 'narcosis of abstraction' in Serres.³⁶⁴ There are strong echoes between Connor's astute diagnostic and the cultural backdrop of the 1960s. Primarily, Serres' philosophy evokes the work of theoretical physicist John Wheeler, whose technophile revival of general relativity became a mainstay of a field called Quantum Holography. Andrew Smith, writing about the NASA moon landing of 1969, notes that Wheeler's theory of information-exchange between quantum particles provided a speculative cosmological backdrop to naturalising the emerging perspectives of the information age.³⁶⁵ Lorenz Engell has likewise assessed that filtering the NASA project through televisions, into the homes of millions of viewers, secured the informationalisation of the world.³⁶⁶ This

³⁶⁴ Connor, 'Topologies: Michel Serres and the Shapes of Thought'.

³⁶⁵ Andrew Smith, 'The Hologram Man', *Moon Dust: In Search of the Men who Fell to Earth* (London: Bloomsbury, 2005), pp.26–75.

³⁶⁶ Lorenz Engell, 'Apollo TV: The Copernican Turn of the Gaze', *World Picture 7* (Autumn 2012), available online <http://www.worldpicturejournal.com/WP_7/Engell.html#_edn18> [accessed 13 February 2017].

reached a consensual crescendo in the moment millions tuned in to watch the landing and saw the earth in NASA photographs taken from space, gazing at ‘maximal redundancy on an epistemic level, and maximal information on an aesthetic level’.³⁶⁷ The totality of the images presented the earth as a mass of information, flowing back through televisions into people’s homes. As Connor makes clear, Serres was equally enamoured with the informationist possibility of cerebral traversals, be these philosophical, narcotic or perspectival, and he venerated ‘the opportunity offered by the society of information to transcend and transform the localised conditions of embodiment’.³⁶⁸ Through impelling these ideas into his philosophy, Serres is complicit in the maximisation of information and minimisation of epistemic unevenness—tantamount to the reduction of difference seemingly certified by a broadcast image of “the whole earth”.

Moreover, in the passage under analysis Serres uses clouds to project this informationalisation, where he writes ‘Matter is no longer left in the prison of the diagram. Fire dissolves it, makes it vibrate, tremble, oscillate, makes it explode into *clouds*’. Here, clouds are being put to work as signs that maximise the relationality of all things. Within this way of thinking clouds are ideological offspring of the earth as a total object of desire.³⁶⁹ That is, Serres uses clouds to provoke an idea of topologically continuous functions or forms from which we are supposed to infer this

³⁶⁷ Engell, ‘Apollo TV’.

³⁶⁸ Connor, ‘Topologies: Michel Serres and the Shapes of Thought’.

³⁶⁹ The earth was an object of informational desire central to Stewart Brand’s *Whole Earth Catalog*, which was sparked by the NASA project to photograph the earth. The journal took the NASA 1967 ATS-3 image as their first-issue cover shot.

tantalisingly forming, tearing and re-forming signficatory whole of the universe, in its final state as information.

If Serres spends his early works preparing the signifying function of clouds, then in the *Birth of Physics* [*La naissance de la physique dans le texte de Lucrèce*], published in 1977, this signficatory value is fully situated within the universe of maximal information. Here Serres attempts to revive a readership for Roman classical poet and philosopher Lucretius, by situating *De Rerum Natura* as a predecessor of twentieth-century theories of thermodynamics. Lucretius's work is written in poetic form, and he uses imagery to convey an atomistic interpretation of the universe.³⁷⁰ For Lucretius, things are 'flimsy images', which 'shed from the outer layer of things'.³⁷¹ Dismantling this 'flimsy' outer later, Lucretius writes:

Come now, and learn how thin the texture of the image is:

For one thing, atoms are beneath detection of the senses,

Much tinier than the point at which our eyes fail to perceive.

And I shall demonstrate this briefly here, so you'll believe

How fine-spun are the warp and woof of things, all matter's

weave.³⁷²

The flow of atoms through the outer layer of things resembles the informationalisation of the earth. Flowing through television sets into

³⁷⁰ Lucretius, *The Nature of Things*, trans. by A. E. Stallings (London: Penguin Books, 2007).

³⁷¹ Lucretius, *The Nature of Things*, p.108 (Book 4: The Senses, lines 63–64).

³⁷² Lucretius, *The Nature of Things*, p.109 (Book 4: The Senses, lines 110–114).

people's homes, the boundaries of things appeared to drop away revealing a finely spun weave of information.

Apparently following Lucretius in this use of imagery, Serres calls the collection of atoms that make up the universe a 'chaos-cloud', suggesting that this 'chaos-cloud' is 'the multiple distribution of the great elementary population at the heart of the stormy mass'.³⁷³ His sustained imagery of clouds and storms is hence intended to express the universe, rather than composed of "things", as composed of processes of forming and tearing which at their base are processes of whole, solid atoms coming together and dispersing. Serres writes, 'Things which are already formed *scatter* by wear and tear, they disintegrate because they are only porous *conjunctions* [my emphases]', 'The world in its globality may be modelled by vortices', and 'The vortex is unstable *and stable*[...]it is the formation of *things* [my emphases]'.³⁷⁴ This diverges significantly from Aristotelian physics and hylomorphism—or the idea that all matter contains the potentiality of form. In Serres' reading of Lucretius, atoms gather into "things" as temporary conjunctions of the most base, absolute, structurally synchronic pre-social unit of the atom.³⁷⁵

This synchronic unit is the basis of topology. When fantastically non-temporal atoms come together they produce forms that are topologically continuous with all other forms in the universe. Hence,

³⁷³ Michel Serres, 'The Return of the Model', *The Birth of Physics*, trans. Jack Hawkes (Manchester: Clinamen Press, 2000), p.27–66, p.27

³⁷⁴ Serres, 'The Return of the Model', pp.27–30.

³⁷⁵ For contention between atomism and Aristotelianism, and the clear division between Aristotle and the atomist argument about aggregation, see David Furley, 'Aristotle and the Atomists on Infinity', *Cosmic Problems: Essays on Greek and Roman Philosophy of Nature* (Cambridge: Cambridge University Press, 1989), pp.103–114.

differentiation and difference are rendered arbitrary within Lucretian physics and atomism. It is in this sense that atomization sets a precedent for the forms of theoretical molecularization found in many strands of new ontologies, sci-fi materialisms, and (post-)(vital-)(agential-) realisms. These mythic-ontological theories are able to stake a claim to ethical questions of the ecology because they use atoms and objects to re-mediate normative claims about nature, origins and universality.³⁷⁶ Isolating the problem of this ‘micrologizing drive’ of fanatical object-oriented ontologies, Jord/ana Rosenberg writes:

The ontological turn[...] reshapes an old paradigm, a primitivist fantasy that hinges on the violent erasure of the social: the conjuring of a realm – an “ancestral realm” – that exists in the present, but in parallax to historical time.³⁷⁷

Rosenberg means to highlight the primitivist fantasy that undergirds object-oriented ontologies. Following Lucretius, Serres atomises the universe and

³⁷⁶ Titles that address the claim to eco-criticism and the environmental humanities, are as follows: Timothy Morton, ‘Here Comes Everything: The Promise of Object Oriented Ontology’, *Qui Parle: Critical Humanities and Social Sciences*, 19.2 (Spring/Summer 2011), 163–190; *Hyperobjects: Philosophy and Ecology After the End of the World* (London: University of Minnesota Press, 2013); Levi Bryant, *The Democracy of Objects* (Open Humanities Press, 2011); Jane Bennett, *Vital Matter: A Political Ecology of Things* (London: Duke University Press, 2010); Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (London: Duke University Press, 2007); Graham Harman, *Tool Being: Heidegger and the Metaphysics of Objects* (New York: Open Court, 2011); *Guerilla Metaphysics: Phenomenology and the Carpentry of Things* (New York: Open Court, 2011).

³⁷⁷ Jord/ana Rosenberg, ‘The Molecularization of Sexuality: On Some Primitivisms of the Present,’ *Theory & Event*, 17.2 (2014), available online <muse.jhu.edu/article/546470> [accessed 12 February 2017].

thereby posits a primitivist fantasy that hinges on violent erasures. The object-orientation of this ontological enquiry uses clouds as “things” to mediate the erasures of atomism and the traversals inherent in topology. These traversals are key to Serres’ style of thinking.³⁷⁸ Connor cites instances where Serres uses objects/things to think through transversals, such as: ‘skins, textiles, bags, tapestries, kimonos, rivers, coastlines, clouds, vortices, mountain-ranges and flames’.³⁷⁹ These image-objects are instrumental to Serres’ atomistic argument. Serving as synonyms for the cognitive space he is preparing, they themselves are rendered topologically continuous with one another in virtue of his style of writing. The signifying function of matter-as-information is hence mediated through image-objects simply on account of the style of writing that is brought to bear upon them. These image-objects are part of the molecularizing drive. It conjures the image-object as a figuration of an “ancestral realm”, ‘parallax to historical time’.

The writer Rainer Guldin has worked upon Serres in a way that exposes clouds as taking precedence over other image-objects. Guldin in fact situates Serres alongside thinkers such as Leonardo da Vinci (1452–1519), Michelangelo di Lodovico Buonarroti Simoni (1475–1564), Albrecht Dürer (1471–1528), Leon Battista Alberti (1404–1472), Piero di Cosimo

³⁷⁸ Bruno Latour in Michel Serres and Bruno Latour, ‘Second Conversation: Method’, *Conversations on Sciences, Culture, and Time*, trans. by Roxanne Lapidus (Ann Arbor: The University of Michigan Press, 1995), pp.43-76, p.44: ‘Why, in the space of one paragraph, do we find ourselves with the Romans then with Jules Verne then with the Indo-Europeans then, suddenly, launched in the Challenger rocket, before ending up on a bank of the Garonne River? We can see your footprints here and there but we can’t see the path that links them’.

³⁷⁹ Connor, ‘Topologies: Michel Serres and the Shapes of Thought’.

(1462–1522), William Shakespeare (1564–1616), Johann Wolfgang von Goethe (1749–1832), Alexander Cozens (1717–1786) and Ernst Gombrich (1909–2001). He uses this conglomeration of thinkers to summarise an atomistic reading of clouds in Serres:

clouds are transient formless fields of possibilities, from which new information can emerge. They represent one of the central metaphors for present day global society. [...]The cloud is, furthermore, an eminently interdisciplinary phenomenon which has attracted the interest of all those working on theoretical borders.³⁸⁰

These thinkers are grouped under Guldin’s reading through their use of clouds as primary object-image mediators of the transcendent perspective tantalisingly made possible by the understanding of matter-as-information or form-as-function. In Connor’s critique of Serres, and in line with the micrologizing effects of atomism, this informationalist ‘monism of the manifold’ involves the collapse of space and time.³⁸¹ The concept-being of clouds replicates the conceptual being of mythic-ontological objects. As condensates of information, clouds are “before” and “after” all forms because they emblematises the topology of form-as-function.

It is for this exact reason that Serres’ clouds are mechanical not metaphorical forms. These figures are not mere metaphors peppering his work or colouring his concepts. They are metaphors that are put to work,

³⁸⁰ Rainer Guldin, ‘Hagen Bonifer :“Und über uns ein Meer aus Zeichen” Das Geheimnis der Wolken. Zyklus in zehn Gemälden’, available online <<http://rainer-guldin.ch/rainer-guldin/>> [accessed 14 August 2014].

³⁸¹ Connor, ‘Topologies: Michel Serres and the Shapes of Thought’.

intended to evoke a predetermined concept of atomism, and at the same time, intended to immediately associate that predetermined concept with the forms of the sky. Hence these cloud concepts are engaged in a mechanised metaphorical textual process of disassociated/abstraction and re-association. Clouds mediate the idea of the manifold by serving to refer that idea to the ecology, as if a natural construct. Rosenberg has eloquently analysed the intensification of settler colonialism that becomes permissible through such object-oriented ontologies. The lust for mythic forms that stand beyond history empowers the financial moment of capital accumulation, reiterating the ‘violent (catastrophic) reopening of the question of the origin’, as per Sandro Mezzadra.³⁸² The figural use of clouds naturalises this primitivist thesis of object-ontology. It puts clouds to work as a mythic-ontology of the origin narrative that is central to settler colonialism.

Serres’ *Angels* (1995) [*La Légende des Anges* (1993)], exemplifies this primitivist aetiology. Here Serres continues to be guided by his concomitance to Leibniz and to thermodynamics yet turns in his subject matter to directly address the problematic nature of globalisation. Doing so, Serres introduces additional material used to re-mediate his primitivist atomism. Serres’ analysis ranges across the globe to explore issues of excess and consumption; the effects of environmental policies on developing countries; and even the circulation of images of war. He includes a singularly striking photograph of dead bodies on the surface of floodwater

³⁸² Rosenberg, ‘The Molecularization of Sexuality’. Cf. Harvey, ‘Reading Marx’s Capital, volume 2’; Sandro Mezzadra, ‘The Topicality of Pre-History: A New Reading of Marx’s Analysis of ‘So-Called Primitive Accumulation,’ trans. by Arianne Bove, *Rethinking Marxism* 23.3 (2011) 302–321 (p.314).

following a monsoon near the village of Bahvadar-Palli, Bengal, India, on November 19th 1977.³⁸³ I am not concerned by the inclusion of these materials, but rather by what these social realities come to constitute in the progression of Serres' writing. Serres appends the text with a scripted dialogue where he speaks on the part of the reader addressing his style. The reader asks him to explain his style, and Serres responds:

*Masses of angels, a swarming, multitudes, an army, a troop, a procession, a parade . . . a barely ordered chaos, from within which individualities may sometimes emerge[...] Their form is generally fairly adaptable. That form is the skeleton key which enables them to open the blackest boxes, and this wealth of different forms extends to embrace all the different aspects that you have just listed and thus enables us to read our present era like an open book: our sciences, both abstract and practical, our hardware and software technologies—all our activities, both concrete and volatile.*³⁸⁴

In the above passage, Serres continues to frame the cognitive exercise of his writing through a theory of form as gatherings of atoms. Yet here the form is not a tapestry, a handkerchief or a river. Here, the projected cognitive space that substantiates Serres' primitivism is the world in its state of globalisation—in all its ecological and social realities of oppression and exploitation. Indeed, the language of the '*barely ordered chaos*' and the '*generally fairly adaptable*' material describes the data that is input into

³⁸³ Michel Serres, 'Los Angeles', *Angels: A Modern Myth*, trans. by Francis Cowper, ed. by Philippa Hurd (Paris: Flammarion, 1995), pp.59-78, pp.74-75.

³⁸⁴ Serres, 'Legend', *Angels*, pp.293-97, p.295-96.

Serres' writing machine. The output is a cognitive space that is topologically continuous with the shape of clouds in *La naissance de la physique* (1977). Hence, the historical atrocities of globalisation are cited to produce Serres' atomist myth-ontology of form.

Cary Wolfe has noted Serres' diffuse quality of writing in the introduction to the English-language edition of *The Parasite* (2007) [*Le parasite* (1980)]. Here she states that Serres is on a philosophical quest to fight against clarity.³⁸⁵ Equally, in the introduction to the English-language edition of *The Birth of Physics* (2000) [*La naissance de la physique dans le texte de Lucrèce: fleuves et turbulences* (1977)], David Webb reminds us that Serres encourages the reader to swap presuppositions of solid mechanics and finite form for instability and fluctuation.³⁸⁶ Reflecting further upon this style of writing, Alessandro Delcò, Matthew Tiews and Trina Marmarelli celebrate Serres for having invented the indeterminate essence of his own philosophy.³⁸⁷ It is precisely the invention of this indeterminacy that should ring alarm bells for scholars working on neo/colonialism and settler-colonialism.

Whilst Leibniz and Maxwellian thermodynamics are the ostensible components of the passage from *Hermes* (1982) and *Birth of Physics* (2000), the book *Angels* (1995) goes far beyond simply applying science or philosophy to history. Instead, this text serves to index politics, culture,

³⁸⁵ Cary Wolfe, 'Bring the Noise: *The Parasite* and the Multiple Genealogies of Posthumanism' in Michel Serres, *The Parasite*, trans. by Lawrence R. Schehr (London: University of Minnesota Press, 2007), pp.xi–xxviii, p.xiii.

³⁸⁶ David Webb, 'Introduction', in Michel Serres, *Birth of Physics*, pp.vii–xviii.

³⁸⁷ Delcò, Tiews and Marmarelli, 'Michel Serres: Philosophy as an Indeterminate Essence to be Invented'.

society and history, as components that Serres uses to ‘invent’ the indeterminate function of clouds. This mythology of clouds aligns with the mythological form that clouds take within the working concepts of the computer industries. Broadly speaking, through a parallel mechanism of disassociation and re-association, ecological clouds are somehow referred to through a concept of trans-historical traversals; of turbulent vortices; of precarious wholes composed of stable molecules; or of unknown forms made up of atoms we know and understand. The primitivist bent of this argument is evident upon the interrogation of the atomistic theories clouds are mechanised to substantiate.

In order to build a picture of the much deeper history of this mechanisation of clouds, I will presently turn to the nineteenth-century British colonial uptake of a poem entitled *Megha-dūta*, or ‘Cloud Messenger’, a narrative poem in Sanskrit, from between 2nd to 5th-century AD, generally attributed to the South Asian poet Kālidāsa.³⁸⁸ This poem is about a Yaksha who imagines sending a message to his wife by using a cloud as a messenger. Perhaps counterintuitively, I do not want to look at this poem as a predecessor of how “users” of the cloud can “deposit” information in remote data banks. Rather, the forthcoming section of this chapter develops an understanding of the poem by situating it within the deep history of the colonial imaginary of India. This connection should be suggested by Hu’s unearthing of information about Bangladeshi workers

³⁸⁸ When Kālidāsa was writing is a point of contention. See Vasudev Vishnu Mirashi and Narayan Raghunath Navlekar, *Kālidāsa: Date, Life and Works* (Bombay, India: Poplar Prakashan, 1969).

solving CAPTCHA problems at \$1.50 a batch.³⁸⁹ By making this connection, I by no means advocate for an imperialist model of homogenous time where the transition from a British colony to a postcolonial nation-state could be seen as smooth.³⁹⁰ That would be akin to suggesting that Kālidāsa anticipated the way “users” would engage in the remote networked relations of the sociotechnology of cloud computing. That argument is redundant within a conceptual history, because it does not pay heed to the long history of oppression that has led to a disjunction between the users and the workers behind the scene. The Yaksha in the poem cannot be compared to a “user” nor the cloud to computational media. Any understanding that we have of the poem has been filtered through the colonial imaginary of India. That history displaces the presumption of a direct correlation between networked relation and poetic trope.

Hence, in assessing the role that the nineteenth-century orientalist reading of the *Megha-dūta* played in the deep history of dispossession, I am indebted to the work of Benedict Anderson, Arjun Appadurai, Francesca Orsini and Upamanyu Pablo Mukherjee, for their reflections upon what Anderson terms ‘print capitalism’.³⁹¹ These writers collectively allude to the

³⁸⁹ Hu, ‘Conclusion’, p.146.

³⁹⁰ Partha Chatterjee, ‘The Nation in Heterogeneous Time’, *The Politics of the Governed: Reflections on Popular Politics in Most of the World*, The Leonard Hastings Schoff Memorial Lectures (New York: Columbia University Press, 2004), pp.3-26. *See also* Phillippe Rekacewicz, ‘Mapping Concepts’, *Globalization*, ed. by Arjun Appadurai (London: Duke University Press, 2001), pp.52-56; Vivek Chibber, *Locked in Place: State-Building and Late Industrialization in India* (London: Princeton University Press, 2003).

³⁹¹ Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983); Arjun Appadurai, ‘Disjunction and Difference in the Global Cultural Economy’, *Modernity at Large: Cultural Dimensions of Globalization*, Public Worlds, vol. 1

colonial force of nineteenth-century print cultures. The translation of Sanskrit texts such as the *Megha-dūta* goes hand-in-hand with the mass production and distribution of a colonial cultural imaginary of India, through the manner of annotating and abstracting its literary history. It is my contention that this colonial cultural imaginary continues to pervade how an industrial arrangement of computing services makes use of Indian subaltern workers, through the mechanisation of cloud-as-signs.

Hence, I will argue that nineteenth-century print cultures can be taken as precursors of the oppressive structures of “cloudonomics,” structuring the lives of workers through the capacity demands of “users,” while presenting these structures as natural. That is, the way clouds work in “cloudonomics” echoes the way clouds work in the orientalist translation of the Sanskrit *Megha-dūta*. Both literary strategy and social phenomenon depend upon dynamics of abstraction and association. This will draw me to conclude that statements about “what clouds are” collude to exploit subaltern workers of the global South. As already explored, the ‘calm callousness toward the powerless’ or the ‘commitment to a supposedly abstract goal – development’ misrepresents what is best seen as an *a priori* commitment to capitalist industrialisation.³⁹² For Nivedita Menon and Aditya Nigam this prioritises the ideologies of the Global North over the

(London: University of Minnesota Press, 1996), pp.27–47, p.28; Francesca Orsini, *Print and Pleasure: Popular Literature and Entertaining Fictions in Colonial North India* (New Delhi: Permanent Black, 2009); Romilla Thapar, ‘Kalidasa in the Nineteenth Century in Europe and in India’, *Mapping Histories: Essays presented to Ravinder Kumar*, ed. by Neera Chandhoke (New Delhi: Tulika, 2000), pp.5–23.

³⁹² Nivedita Menon and Aditya Nigam, ‘Globalization I: accumulation by dispossession’, *Power and Contestation: India since 1989*, Global History of the Present, Series Ed. Nicholas Guyatt (London: Zed Books, 2007), pp.61–82, p.62.

environmental concerns of Indian agrarian populations.³⁹³ The semio-capitalist project of using ecological symbols partakes in this façade of global environmentalism. Hence, I have found that analysing the translation of the *Megha-dūta* provides a vital historical access point to understanding just how it is that using clouds as symbols could thereby interpellate humans into their disembodied status.

The Colonial Mechanisation of Clouds

There are numerous Sanskrit manuscripts of the *Megha-dūta*. I am interested in the printing process whereby these manuscripts found their way into English-language translations and critical essays. The poem was first translated into English by orientalist Horace Hayman Wilson (1786-1860). In 1813, Wilson published his translation under the title *The Mégpha Dūta; or Cloud Messenger; A Poem, in the Sanscrit Language, by Cālidāsa*, working hand-in-hand with Bengalese commentaries of Kālidāsa's poem, studying a manuscript held in the India Office Library, and publishing his work in Calcutta.³⁹⁴ Nineteenth-century Calcutta marks an intersection

³⁹³ Menon and Nigam, 'Globalization I: accumulation by dispossession', p.62.

³⁹⁴ Kālidāsa, *The Mégpha Dūta; or Cloud Messenger; A Poem, in the Sanscrit Language, by Cālidāsa*, trans. by Horace Hayman Wilson (Calcutta: Pereira, 1813). Sushil Kumar De and V. Raghavan, 'Introduction', in *The Megha-Dūta of Kālidāsa*, ed. by Sushil Kumar De, 2nd edn. ed. by V. Raghavan (New Delhi: Sahitya Akademi, 1970), pp.3–30, p.3: 'Wilson's earliest edition was based, it appears[...] from the comparatively modern Colebrooke manuscript (no. 3774/1584) existing in the India Office Library'. Cf. Horace Hayman Wilson, 'Preface' to Kālidāsa, *The Mēgha Dūta, or Cloud Messenger, a Poem in the Sanskrit*

between ‘the emergence of a world of commercial publishing and entertainment, and the creation of a reading public’.³⁹⁵ Orsini and Graham Shaw together highlight that nineteenth-century Calcutta functioned as a centre of imperial power, key to the colonial literary project of the translation, exegesis, typesetting and distribution of Hindi, Urdu and Bengalese texts and manuscripts.³⁹⁶ Wilson’s own English-language adaptation went through this system and was then revised and republished in 1843 in London. This edition was followed by several other editions and was reprinted as late as 1973.

Looking across these works, Wilson’s orientalist strategies are identifiable in long prefatory notes, heavy footnoting and annotations on the poem. David Damrosch rather sympathetically attributes these strategies to the fact of Kālidāsa’s spatial and temporal distance from Wilson and his Western readership.³⁹⁷ By the second edition of 1843, Wilson has revised his previously appended annex of ‘Annotations’ into footnotes that overpower the poem on the page. He notes in the ‘Preface’:

I have gone over the Notes with more attention[...] I have added some, and omitted some, especially those which were designed to place the parallel passages of European poets *in contiguity with the language* and sentiments

Language, trans. by Horace Hayman Wilson, 2nd edn. (London: Richard Watts, 1843), p.vi; Theodor Aufrecht, *Catalogus Codicum Sanscriticorum Bodleianae* (Oxford: Clarendon Press, 1864), no. 218; J Eggeling, *Catalogue of Sanskrit Manuscripts* (London: Gilbert and Rivington, 1904), p.vii.

³⁹⁵ Orsini, *Print and Pleasure*, pp.2.

³⁹⁶ Orsini, *Print and Pleasure*, p.2, p.5, pp.10–11, p.13, p.33, p.276; Graham Shaw, *Printing in Calcutta to 1800: A Description of Printing in Late 18th-Century Calcutta* (New York: Oxford University Press, 1981).

³⁹⁷ David Damrosch, ‘What cloud a message mean to a cloud? Kalidasa [sic] travels West’, *Translation Studies*, 1.1 (2008), 41–54.

of the Indian bard. Such analogies will readily suggest themselves to well-educated minds; and it cannot be necessary to endeavour to prove to them; that Imagination, Feeling and Taste, are not exclusively the products of the Western Hemisphere [my emphasis].³⁹⁸

In placing emphasis upon linguistic contiguity, Wilson alludes to translation as an act of direct transfer. Yet his translation is one of extracting and transposing a concept from the *Megha-dūta*. As Wilson explains, he wishes to excuse ‘the apparent absurdity of the Yaksha’s addressing himself to a Cloud as to a rational being’.³⁹⁹ We need only look at the density of the annotations on the pages of this later edition to realise the way Wilson overwhelmed the poem with his own translations in an effort to make this concept palatable to Western readers. These dense cultural assimilationist annotations re-fashion the poem into Wilson’s own text. The poem at the heart of this activity serves as what Edward W. Said might call the ‘living tableau’, while the strategies of annotation aim to tame and decode those ‘absurd’ Sanskrit poetics into comprehensible ideas.⁴⁰⁰

The unstated assumption of this method of translation is that there is some universal idea of clouds that is prior to the Sanskrit poet, somehow open and transparent to Wilson as a Western translator. Writers like Wilson, from both Indian and European intellectual circles, collectively brought Kālidāsa to the attention of the Western world in the nineteenth century, and

³⁹⁸ Wilson, ‘Preface’ to Kālidāsā, 2nd edn. p.iii.

³⁹⁹ Wilson in Kālidāsā, 2nd edn. annotation to verse 764, pp.98–99.

⁴⁰⁰ Edward W. Said, ‘The Scope of Orientalism’, *Orientalism* (London: Routledge & Kegan Paul, 1978), pp.31–110, p.103.

the Sanskrit poet came to be a central figure in German Romanticism.⁴⁰¹ The heavy annotations in the *Megha-dūta* make this text a key instrument in the critical praxis of assimilation that defined this movement of intellectual imperialism. Broadening Kālidāsa's relevance to global proportions, and jointly contemporising and historicising the poet, Wilson compares the *Megha-dūta* with writers from the Western canon of literature, citing or excerpting a large selection of Classical writers, from the Greek poet Homer (c.750-700BC) and Greek comedian Aristophanes (c.449BC–386/380BC), to Roman poets Ovid (43BC-17AD), Gaius Valerius Catullus (c.82BC-c.53BC) and Horace (65BC-8BC). These comparisons to writers of the classical canon reflect the philological theories of German Orientalist Friedrich von Schlegel (1772-1829). In *On the Language and Wisdom of the Indians* [*Über die Sprache und Weisheit der Indier*] (1808), Schlegel compares Sanskrit, Greek, Persian, Latin and Germanic languages, seeking to suggest that Ancient Greek and Sanskrit were etymologically related 'organic' languages, as opposed to non-inflected, 'mechanical' languages.⁴⁰² This link between Wilson and Schlegel's methods of comparison signals the processes of cultural assimilation at work in Wilson's text.⁴⁰³

⁴⁰¹ Thapar, 'Kalidasa in the Nineteenth Century in Europe and in India', pp.5–23, p.5.

⁴⁰² Michael Franklin, 'Introduction', in *The European Discovery of India: Key Indological Sources of Romanticism*, vol. 4 (London: Ganesha, 2001), pp.vii–xviii, p.xiii. Cf. Friedrich Schlegel, *On the Language and Wisdom of the Indians*, Ellen J. Millington (London: Henry G. Bohn, 1849); Wilson, *The Mēgha Dūta*,

⁴⁰³ For perspectives on Schlegel's Indo-German naturalisation see Robert Cowan 'The Catholic Nationalist Retreat', in *The Indo-German Identification: Reconciling South Asian Origins and European Destinies, 1765–1885* (New York: Camden House, 2010); Jeffrey S. Librett, 'Figuralizing the Oriental, Literalizing the Jew: From Letter to Spirit in Friedrich Schlegel's *On the Language and Wisdom of the Indians*',

This is especially apparent in the methods employed to decode the ‘absurd’ poetics of the cloud in the poem. In the world of the poem, the cloud is only ever speculatively a messenger, as the poem is in the voice of the Yaksha addressing the cloud and describing the potential journey to his wife. The ‘message’ is only given at the end of the poem, when the Yaksha imagines the delivery of the words ‘What thou to distance driven by wrath divine,/ Imagination joins his form with thine’.⁴⁰⁴ We cannot determine whether or not the cloud has delivered this message. We know not if the cloud speaks, travels, or if it ever listens. Instead, the poem takes place in the imagination of the Yaksha; in this imaginative world (internal to the imaginative world of the poem), the cloud acts as an instrument for joining the Yaksha with his wife, traversing and collapsing the distance between them.

Wilson’s annotations literalise this collapse of distance, through delineating the poem into what Wilson terms ‘the geographical part of the poem’ and ‘the region of unmixed fable, the residence of Kuvera and his attendant demigods’.⁴⁰⁵ Outlining a geographical ‘part’ creates a far more static image of the cloud as a messenger. Rather than imagining this form unfurling out across the collapsed distance between the Yaksha and his wife, Wilson compels his reader to see the cloud as a singular unit, picking its way across a described landscape. The cloud has ceased to fluctuate

Orientalism and the Figure of the Jew (New York: Fordham University Press, 2015), pp.52–72; Edward Said, *Orientalism* (London: Routledge & Kegan Paul, 1978), pp.98–9, p.115.

⁴⁰⁴ Kālidāsa, *The Megha Dūta* (1843), p.90 (verse 676).

⁴⁰⁵ Wilson in Kālidāsa, 2nd edn., p.63 (verse 433, annotation).

indeterminately between message, medium and messenger, and become instead a messenger for mediating messages from one point to another.

Kālidāsa first introduces the cloud in the form of an elephant atop a mountain, in a line that Wilson renders ‘one dark Cloud around the mountain clung ;/ In form, some elephant’.⁴⁰⁶ Wilson builds on this association of the cloud with the ‘form’ of an elephant to draw a link to a passage from William Shakespeare’s *Antony and Cleopatra* (c.1605-8).⁴⁰⁷ The lines are taken from Act IV, scene 14, where Antony, speaking with Eros, says:

Sometime, we see a cloud that’s dragonish ;
 A vapour, sometime, like a bear, or lion,
 A towering citadel, a pendant rock,
 A forked mountain, or blue promontory
 With trees upon ‘t, that nod unto the world,
 And mock our eyes with air.⁴⁰⁸

In principle, Wilson is using Shakespeare to poeticise the appearance of images and forms in clouds. This is supposedly intended to aggrandise Kālidāsa by association, in line with Wilson’s efforts to assimilate the

⁴⁰⁶ Kālidāsa, *The Megha Dūta or Cloud Messenger: A Poem in the Sanskrit Language*, trans. by Horace Hayman Wilson (London: Richard Watts, 1843), p.3 (verses 12–13).

⁴⁰⁷ For this dating of *Antony and Cleopatra* see Arthur M. Z. Norman, ‘The Tragedie of Cleopatra and the Date of ‘Antony and Cleopatra’’, *The Modern Language Review*, 54.1 (1959), 1–9.

⁴⁰⁸ This is as Wilson cites it. See Wilson, Kālidāsa, 2nd edn. verse 13, p.3, annotation; and Wilson, Kālidāsa, *The Megha Dūta, or Cloud Messenger, a poem in the Sanskrit Language*, trans. by Horace Hayman Wilson, The Chowkhamba Sanskrit Series, Vol. IX, 4th edn. (Varanasi–1, India: Vidyavilas Press, 1973), pp.3–4 (annotation).

‘absurd’ living tableau of the poem into material comprehensible to a Western literary imagination. The parallel between his imagery and that of Shakespeare qualifies Kālidāsa as a “great” writer, through assigning to the *Megha-dūta* all of the canonical veneration of Shakespeare’s works.

However, the selection of Shakespeare is not completely guided by the canonicity of this writer. Rather, the reference to Shakespeare transliterates the cloud into a communication device by inputting clouds into a machinic logic. Rhodri Lewis has noted that Antony’s speech suggests Shakespeare was familiar with the aesthetic trope of the ‘image made by chance’.⁴⁰⁹ The ‘image made by chance’ is a Renaissance theory of aesthetics signs that randomly appear as if from nature.⁴¹⁰ Lewis’ suggestion that Shakespeare was versed in the aesthetic theory is supported by Shakespeare’s use of clouds in *Hamlet*, where Young Hamlet uses the changing forms of clouds to mock Polonius:

Ham. Do you see yonder cloud that’s almost in shape of
a camel?

Pol. By th’ mass and ‘tis—like a camel indeed.

Ham. Methinks it is like a weasel.

Pol. It is backed like a weasel.

Ham. Or like a whale.

Pol. Very like a whale.

⁴⁰⁹ Rhodri Lewis, ‘Shakespeare’s Clouds and the Image Made by Chance’, *Essays in Criticism: A Quarterly Journal Founded by F. W. Bateson* 17.1 (January 2012) 1-24. Cf. H. W. Janson, ‘The “Image Made by Chance” in Renaissance Thought’, in *De Artibus Opuscula XL: Essays in Honor of Erwin Panofsky*, vol. 1, ed. by Millard Meiss (New York: New York University Press, 1961), pp.254–266.

⁴¹⁰ Janson, ‘The “Image Made by Chance” in Renaissance Thought’.

Ham. Then I will come to my mother by and by.—

[*Aside*] They fool me to the top of my bent.—I will
come by and by.⁴¹¹

Hamlet imagines the changing forms of clouds moving through different modes of signification. Each cloud-as-sign remembers the air from which it has emerged, in a necessary metaphysical clearing of form for form, camel for weasel, and weasel for whale. This is why the clouds ‘fool’ him to the ‘top of [his] bent’. With this phrase, Hamlet puns on the altitude of clouds. Clouds fool him to the highest altitude of his metaphysical relation to the world because they are here conceptualised as flimsy images divined by pure chance. This parallels atomistic theories of clouds, in that the central idea suggests the precedence of a turbulent void of swirling atoms. Wilson refers to this aesthetic trope through his allusion to Shakespeare. So doing, Wilson translates the ‘absurd’ poetics of the *Megha-dūta* by making reference to the aesthetic trope of ‘the image made by chance’.

This reference covertly transliterates the *Megha-dūta* through making recourse to an aesthetic trope that is atomistic in nature. That is, I would argue that ‘the image made by chance’ does not extend from observations of natural phenomena, but from the Early Modern transformation of organic form into numbers. Two principal figures in the Early Modern theorisation of this move to dissolve matter into numbers are the Italian theoretician Leon Battista Alberti (1404-1472), who wrote *De*

⁴¹¹ William Shakespeare, *Hamlet*, ed. by Harold Jenkins, The Arden Shakespeare, 3rd series ed. by Richard Proudfoot, Ann Thompson and David Scott Kastan (Walton-on-Thames, Surrey: Thomas Nelson & Sons, 1997), Act II, scene 2, lines 366-375, p.310.

statua [*On Sculpture*] (1430-1435) and the architect, artist and theoretician Leonardo da Vinci (1452-1519), who wrote his *Treatise on Painting* following the distribution of Alberti's work.⁴¹² In *De statua*, Alberti models classical theories of the image made by chance in natural forms. Alberti writes:

§1. I believe that the arts of those who attempt to create images and likenesses from bodies produced by Nature, originated in the following way. They probably occasionally observed in a tree-trunk or clod of earth and other similar inanimate objects certain outlines in which, with slight alterations, something very similar to the real faces of Nature was represented.⁴¹³

Alberti here develops an aesthetic theory of natural forms. This paradoxical fusion of aesthetics and nature allows ecological phenomena to serve as the ground of aesthetic-sign-functions, which the artist works into form. Since Erwin Panofsky (1892-1968), Alberti's paradoxes of naturalising aesthetic constructs have been revisited as paradigmatic in Renaissance theories of vision and aesthetics.⁴¹⁴ *De statua*, however, was far less influential than

⁴¹² For the dating of *De Statua* see H. W. Janson, 'The "Image Made by Chance"', pp.259-60; Webster Smith, 'Definitions of Statua', *The Art Bulletin* 50.3 (1968) 263-267 (p.264, n.21). Cf. O. Morisani, 'Introduction', *De statua*, in *Publicazione della Facoltà di Lettere e Filosofia*, 18 (1961) pp.7-20; Charles Seymour, *Sculpture in Italy, 1400-1500* (London: Penguin, 1976), p.220, n.12.

⁴¹³ Leon Battista Alberti, '*De statua: On sculpture*', *On Painting and On Sculpture: The Latin Texts of De Pictura and De Statua*, trans. and ed. by Cecil Grayson (London: Phaidon Press, 1972), pp.117-142, p.121.

⁴¹⁴ Erwin Panofsky, *Meaning in the Visual Arts* (Harmondsworth, Middlesex: Penguin Books, 1983). For a useful literary discussion of the Renaissance paradox of aesthetic form and natural form, see Derek Attridge,

Alberti's other writings, and Janson even goes so far as to suggest that its ideas lay dormant, alongside those of da Vinci, until Alexander Cozens revisited them in *A New Method of Assisting the Invention in Drawing Original Compositions of Landscape* (1785-86).⁴¹⁵

Da Vinci's *Treatise On Painting* post-dates Alberti's treatise *On Sculpture*, and exists as fragments gathered together in 1540 for publication.⁴¹⁶ In *Treatise on Painting*, da Vinci uses clouds to model the idea of the image made by chance. The two passages that are relevant are as follows:

Way to augment and stimulate the mind toward various discoveries. I shall not fail to include among these precepts a new discovery, an aid to reflection, which, although it seems a small thing and almost laughable, nevertheless is very useful in stimulating the mind to various discoveries. This is: look at walls splashed with colors. If you have to invent some scene, you can see there resemblances to a number of landscapes, adorned in various ways with mountains, rivers, rocks, trees, great plains, valleys and hills. Moreover, you can see various battles, and rapid actions of figures, strange expressions on faces, costumes, and an infinite number of things, which you can reduce to good, integrated form.⁴¹⁷ (II, §79)

Peculiar Language: Literature as Difference from the Renaissance to James Joyce (London: Routledge, 2004).

⁴¹⁵ Janson, 'The "Image Made by Chance"', p.264. Cf. Alexander Cozens, *A New Method of Assisting the Invention in Drawing Original Compositions of Landscape* (Treviso: Canova, 1981 [1785-86]).

⁴¹⁶ Janson, 'The "Image Made by Chance"': Janson sees 'little to no doubt' that da Vinci was influenced by Alberti, p.261.

⁴¹⁷ Leonardo da Vinci, *Treatise on Painting (Codex Urbinas Latinus, 1270)*, trans. by A. Philip McMahon (Princeton: Princeton University Press, 1956), p.50.

[...] look into the stains of walls, or the ashes of a fire, or clouds, or mud, or like things, in which, if you consider them well, you will find really marvelous ideas.⁴¹⁸ (II, §76)

Da Vinci brings clouds to the forefront of Alberti's theory of the image made by chance. He thereby inputs clouds into Alberti's more generalised concern in *De statua*, for theorising an anthropometry of idealised human form.⁴¹⁹ As Panofsky notes, Alberti aimed to 'discover the ideal in an attempt to define the normal', by an anthropometry that was attentive to the natural variations in the body.⁴²⁰ Alberti sought to perfect the method of describing humans through numbers.⁴²¹ Diverging from Alberti, Panofsky notes that da Vinci was attempting to extend the materials that this method might be applied to, so as to bring other organic form into numbers.⁴²² In making this move, da Vinci's clouds come to constitute an organic referent for the subjection of all organic form to the numerical logic of emergent forms. Organic matter is abstracted into theoretically numerical forms, only to be re-associated with nature through the use of clouds.

That Wilson refers to this aesthetic trope merely serves to highlight the co-ordinated processes of abstraction and association at play in his translation of the *Megha-dūta*. Wilson makes sense of the *Megha-dūta* by

⁴¹⁸ da Vinci, *Treatise on Painting*, p.59.

⁴¹⁹ Jane Andrews Aiken, 'Leon Battista Alberti's System of Human Proportions', *Journal of the Warburg and Courtauld Institutes* 43 (1980) 68-96; Panofsky, *Meaning in the Visual Arts* (1983); and Joan Kelly Gadol, *Leon Battista Alberti: Universal Man of the Early Renaissance* (Chicago: University of Chicago Press, 1969).

⁴²⁰ Panofsky, 'History of the Theory of Human Proportions', *Meaning in the Visual Arts*, pp.82-138, p.124-125.

⁴²¹ Panofsky, 'History of the Theory of Human Proportions'.

⁴²² Panofsky, 'History of the Theory of Human Proportions'.

conceptualising the cloud as a compound of numbers, gathered into a flimsy thing. For Wilson, the cloud carries a message because it is an image made by chance, in which one can ‘find really marvelous ideas’ or ‘see there resemblances to a number of landscapes, adorned in various ways with mountains, rivers, rocks, trees, great plains, valleys and hills’.⁴²³ In Wilson’s adaptation, the cloud hence carries a message only because it is understood through this European Renaissance theory of vision and aesthetics.⁴²⁴

It is vital to remember that interpretation underlies any comparison Wilson makes between Kālidāsa and Shakespeare, which has become conventionalised within English-language Sanskrit studies.⁴²⁵ Indeed, the late twentieth century was instrumental in securing this assimilation, specifically in the structuralist field of semantic analysis. In a book entitled *The Literary Semantics of Kālidāsa* (1987), Hira Lal Shukla sets out to praise the aesthetic originality of Kālidāsa. The book commences with a short comparative exegesis on the inability to ‘prove[...] who was “greater”: Kālidāsa or Shakespeare’.⁴²⁶ In what follows, Shukla theorises the *Megha-*

⁴²³ da Vinci, *Treatise on Painting*, p.50 (2, §79), p.59 (2, §76).

⁴²⁴ Panofsky, *Meaning in the Visual Arts* (1983); Janson, ‘The “Image Made by Chance”’.

⁴²⁵ Evidencing this convention, see Krishna Shāstrī Bhātawadekara, ‘Preface’ to Kālidāsa, *The Megha Dūta, or Cloud Messenger, A Poem by Kālidāsa with Commentary by Mallinātha Together with A Glossary of Difficult Words by Krishna Shāstrī Bhātawadekara* (Bombay: Ganpat Krishnaji’s Press, 1866), pp.1-5, p.2: Bhātawadekara designates Kālidāsa as ‘the universally recognised Shakespeare of India’. Additionally, see the prevalence of Shakespeare (and many other writers in the Western canon) used to index the poem, in the epigraph, footnotes and bibliography of Krishna Chandra Roychowdhury, *Kālidāsa’s Imagary in the Meghadūta* (Burdwan: The University of Burdwan, 1991).

⁴²⁶ Hira Lal Shukla, ‘Introduction’, *The Literary Semantics of Kālidāsa* (Shakti Nagar, Delhi: Gian Publishing House, 1987), pp.1-12, p.8. Cf. Joseph T. F. Jordens, ‘Idyll and Reality in the Shakuntalā and the Tempest’, *Jadavapur Journal of Comparative Literature* 5 (1965) 1-12.

dūta in accordance with the semiotic theories of Ferdinand de Saussure (1857-1913) and Roman Jakobson (1896-1982). He applies information theory and word-count mathematics to the poem, quantifying and tabulating the ‘pragmatics’ and ‘stylistics’, and limiting its poetics to quantifiable processes of ‘aesthetic-sign-production and sign-processing’.⁴²⁷ This semiotic analysis of the ‘aesthetic-sign-production’ of Kālidāsa’s poem revisits the Renaissance procedure of using clouds to naturalise a theory about numerical organic form. Indeed, Shukla’s semiotic analysis pays a direct visit to those theories. A poem with an imagined cloud as its central conceit is used to re-route the computational language of ‘sign-processing’ and ‘sign-production’ through the ecology.

Wilson is selective in how he stages his cultural assimilation, and what he elides from his annotation is just as important as what he includes. These omissions specifically relate the image made by chance to the Early Modern practice of building cloud machines. Looking through that omission, it becomes clear that the cultural assimilation of the *Megha-dūta* is not the only identifiable moment in the colonial history of mechanising clouds. In fact, across the continent of Europe in the Early Modern period labourers were being put to work to stage clouds as spectacles often known as the *deus ex machina*. Looking at these machines offers a further example of how using clouds as symbols partakes in the abstraction and dispossession of vital energy from life.

⁴²⁷ Shukla, ‘Prologue’, n.p.

Labouring Clouds within Art Machines

Wilson leaves out a convolution in the speech where Antony clarifies ‘Thou hast seen these/ signs?/ They are black vesper’s pageants’.⁴²⁸ The word ‘signs’ was prevalent in the Renaissance enterprise of meteorology, having been introduced into these circuits of knowledge when Averroes, reading Aristotle, used the phrase ‘*demonstratio signi*’ or ‘demonstrations from signs’ to describe the meteorological procedure of analysis.⁴²⁹ Craig Martin argues that Averroes placed an emphasis on two types of sign running through the *Meteorologica*: *semeion* and *tekmerion*.⁴³⁰ These different types of signs are referred to across Aristotle’s corpus, and there is a long history of debating what falls into what category.⁴³¹ *sêmeia* can be seen as contingent signs and *tekmêria* as necessary signs. This implies that Shakespeare’s reference to clouds as ‘signs’ is compatible with the Renaissance enterprise of retroactively dividing Aristotle’s corpus along these internal fault lines, conceptualising clouds as *sêmeia*, in opposition to other, more ‘certain’ forms and things as *tekmerion*. This sign-function style of interpreting Aristotle demonstrates a broader enterprise of positioning

⁴²⁸ William Shakespeare, *Antony and Cleopatra*, Ed. by John Wilders, The Arden Shakespeare, Third Series, Richard Proudfoot, Ann Thompson, David Scott Kastan (Eds.) (London: Routledge, 1995), Act 4, Scene 14, Lines 2-8, p.254.

⁴²⁹ Craig Martin, ‘The Epistemology of Meteorology’, *Renaissance Meteorology* (2011), pp.21–37, p.22; Craig Martin, ‘Conjecture, Probabilism and Provisional Knowledge in Renaissance Meteorology’, *Early Science and Medicine*, 13.1/3 Evidence and Interpretation: Studies on Early Science and Medicine in Honor of John E. Murdoch (2009), 265–289.

⁴³⁰ Martin, ‘The Epistemology of Meteorology’, pp.21–37, p.25.

⁴³¹ Donald Morrison, ‘Philoponus and Simplicius on Tekmeriodic Proof’, *Method and Order in Renaissance Philosophy of Nature*, ed. by Daniel A. Di Liscia, Eckhard Kessler, Charlotte Methuen (Aldershot, Hampshire: Ashgate Publishing, 1997), pp.1–22.

clouds as certainly contingent forms. As contingent signs, Aristotle's meteorological ideas about the forms of the sky were being subjected to Platonic and Neo-Platonic ideas about ideal form.⁴³²

Within this Early Modern episteme, clouds 'mock our eyes' because they resemble forms but are in fact only *sêmeia*, or uncertain signs or traces of form. Shakespeare's assertion that clouds are 'signs', then takes place through the *semeion/tekmerion* rubric. As *semeion* (contingent signs), clouds attained a lexical function and hence could be used to refer to other things, re-disclosed as iconographic or even hieroglyphic. Within this rubric, matter becomes an atomistic substratum of signification, from which aesthetic-signs trace the flimsy surfaces of what 'is, was, or will come-to-be'.⁴³³ This positions Shakespeare's text within the Renaissance enterprise of meteorology.⁴³⁴ Where Antony asks Eros if he has seen the signs of the sky, Shakespeare explicitly engages with questions on the meteorological philosophy of clouds as contingent signs.

This allows Antony to respond by drawing a parallel between scientific meteorology and theatrical productions, answering his own question about cloud 'signs' by way of referencing the Early Modern aesthetic enterprise of building cloud machines. In the word 'pageants', Shakespeare directly refers to the movable theatrical floats of civic pageants

⁴³² Martin, 'Conjecture, Probabilism and Provisional Knowledge', pp. 265–289.

⁴³³ Donald Morrison, 'Philoponus and Simplicius on Tekmeriodic Proof', p.3.

⁴³⁴ This follows Adrian Johns's insight into Early Modern natural philosophy as more 'enterprise' or practical endeavour than established scientific field that might determine literary practice. See Adrian John, 'Identity, Practice and Trust in Early Modern Natural Philosophy', *The Historical Journal*, 22.4 (1999), 1125-1145. See also Janković, 'Imperfect Mixtures', pp.22–28.

and underhandedly to the stagecraft of courtly masques, as two popular forms of theatre where clouds would have been familiar to Early Modern audiences. Practitioners of civic pageants included Shakespeare's contemporary Thomas Middleton (1580-1672) whose civic pageant *The Triumph of Truth* took place in 1613, theatricalising the allegorical figure of 'Error' with his head 'rolled in a cloud'.⁴³⁵ Further to this example, theatrical productions of courtly masques and civic pageants oftentimes involved cloud machines made up of a complex system of wood, pulleys and ropes for transporting clouds and actors across a stage space.⁴³⁶ These clouds were painted on fabric, or white wool wadding was stuck on a platform transporting an actor playing a divinity.⁴³⁷ The writer Ben Jonson (1672-1637) was deeply invested in this Renaissance theatrical enterprise of exploring the emerging signifying function of clouds. Jonson's collaboration with Inigo Jones (1573–1652), from 1605-1631, references the Italian *intermezzi* in the use of clouds, while clouds were instrumental in the quarrel between Jones and Jonson about poetry and architecture.⁴³⁸

The Baroque architect and artist Filippo Brunelleschi (1377-1446) was a key figure in this experimentation with embedding clouds as

⁴³⁵ Thomas Middleton, *The Triumph of Truth* in *The Works of Thomas Middleton*, ed. A. H. Bullen (New York, 1964), VII, p.252.

⁴³⁶ Judith Dundas, 'The Truth of the Spectacle: A Meditation on Clouds', *Comparative Drama*, 14.4 (Winter 1980-81), 332–345.

⁴³⁷ Dundas, 'The Truth of the Spectacle: A Meditation on Clouds'.

⁴³⁸ Dundas, 'The Truth of the Spectacle: A Meditation on Clouds', (p.341). Cf. Ben Jonson, 'An Expostulation with Inigo Jones', II, in *The Complete Poetry of Ben Jonson*, ed. by William B. Hunter, Jr. (New York: New York University Press, 1968), pp.31–34, pp.39–41, pp.45–50; D. J. Gordon, 'Poet and Architect: The Intellectual Setting of the Quarrel Between Ben Jonson and Inigo Jones', *Journal of the Warburg and Courtauld Institutes*, 12 (1949), 152–8, reprinted in Donald James Gordon, *The Renaissance Imagination*, ed. by Stephen Orgel (Berkeley: University of California Press, 1975), pp.77–101.

components of a working machine. He built a device that would project a reflection of the clouds moving across the sky, onto a mirror inside a miniature perspectival painting of buildings. The French post-structuralist theorist Hubert Damisch (b.1928) has written extensively about Brunelleschi's device.⁴³⁹ Brunelleschi's device allowed the viewer to see the construction of the aesthetic image with clouds performing as a component in the perspectival assemblage. When Brunelleschi input clouds into an aesthetic assemblage he opened clouds to the very possibility of signification, and demonstrated this opening through an instrument resembling a miniature theatre, held up to the eye. Brunelleschi's work hence seems to suggest that clouds can be signs if they could be input into aesthetic machines.

This Italian mechanisation of clouds as aesthetic signifying functions was transmitted to England, where Brunelleschi's experiment was scaled upon into the perspectival theatrical productions of architectural practitioner Inigo Jones.⁴⁴⁰ Jones was reading the stage design handbooks of the Italian architect Nicola Sabbattini (1574-1654). In Sabbattini's designs for theatrical *intermezzi*, or allegorical interludes, cloud machines are described in exacting terms, in passages that are accompanied by hand-drawn

⁴³⁹ Hubert Damisch, *A Theory of /Cloud/: Toward a History of Painting*, trans. by Janet Lloyd, *Cultural Memory in the Present*, ed. by Mieke Bal and Hent de Vries (Stanford, California: Stanford University Press, 2002); *The Origin of Perspective*, trans. by John Goodman (Cambridge, Mass.: MIT Press, 1994).

⁴⁴⁰ Judith Dundas, 'The Truth of the Spectacle', p.336: Dundas suggests Jones was inspired by the cloud machine engravings in the stage handbooks of Italian architect and designer Nicola Sabbattini, and was henceforth influential within English stage design. Cf. Glynne Wickham, *Early English Stages* (London: Routledge, 1963), pp.262-75 (2, Pt. 1).

diagrams. In a section of the stage design handbook that Jones would have read, entitled ‘How to Make the Heavens in Sections’, Sabbattini writes:

Let AB be the cross section of the first section of the heavens, and CD the second, and EF a frame as a cloud, placed behind the houses at one side in a convenient position.⁴⁴¹

I find this passage striking for the way Sabbattini compresses different registers into one design. On one level, the notion of the ‘heavens’ carries religious overtones. Sabbattini does not use this tone ironically. Later, in ‘How To Make A Paradise’, he writes:

A little before showing the paradise, these lights will be lighted. The shutter may be run to the side, and thus a very beautiful flight of clouds may be seen. Truly it will seem a paradise.⁴⁴²

Reading the above passage, it becomes clear that Sabbattini intends to describe how to literally construct the heavens in a manner that will amaze religiously devout onlookers. This starkly contrasts the language of ‘AB’, ‘CD’, ‘EF’, ‘frame’ and ‘cross section’. These mechanical terms measure the heavens into the sections seen in diagrams annotated with the letters ‘A’, ‘B’, ‘C’. The idea of convenience, introduced by Sabbattini at the end of the

⁴⁴¹ Nicola Sabbattini, ‘Book Two: Concerning the Disappearance and Changing of Scenes’, *Manual for Constructing Theatrical Scenes and Machines*, 1638, trans. by Allardyce Nicoll, John H. McDowell, George R. Kernodle, in *The Renaissance Stage: Documents of Serlio, Sabbattini and Furttenbach*, Books of the Theatre Series, 1, ed. by Barnard Hewitt (Coral Gables, Florida: University of Miami Press, 1958), pp.98–177, p.148.

⁴⁴² Nicola Sabbattini, ‘Book Two’, p.173.

passage, seems to exist on this second, more instrumental register. It is part of the mechanics of the writing, which map onto the theatre space as a method of allowing its movements to function to produce the divine signs of the heavens that move through the text.

The passage is a remarkable instance of how clouds can exist as spectacles when input into a machinic logic. Clouds are between the register of the heavens and the ‘AB’ mechanical system of the design. Turning to a handbook from the German stage designer and architect Joseph the Elder Furttentbach (1591–1667), the following passage, excerpted from his ‘Civil Architecture (1628)’, uses parallel terms:

For the heavens, for *cerchie*, or curved frames covered and painted with clouds, are built and placed one behind the other, each at a lower level than the one in front of it. The foremost frame is set 36 feet above the stage level at the front pit ; the rearmost rests on the back shutter. Between the *cerchie* are spaces 4½ feet wide to allow *deastros*, or gods, and triumphal cars to be let down from above or moved over the stage.⁴⁴³

What is peculiar about this passage is the fact that Furttentbach is mainly describing the smooth mechanisms seen by the audience, though he is capable of doing so in the technical vocabulary that exists backstage and in the wings. Indeed, Furttentbach has achieved a level of virtuosity in his language of machines, so that he is writing in a manner that will help convey how the machines should be assembled, where ‘heavens’ easily slips

⁴⁴³ Joseph the Elder Furttentbach, ‘Joseph the Elder Furttentbach’, trans. by George R. Kernodle, in *The Renaissance Stage*, pp.178-252, p.186.

into ‘*cerchie*’, which are themselves obviously equivalent to ‘curved frames painted with clouds[...] built and placed’. These passages from cloud machine architects demonstrate that cloud machines are also language machines. Clouds machines were taking effect in language, reconfiguring the lexicality of clouds.

The Renaissance practice of building cloud machines opened the ecological forms of the skies to the semantics of machines. In ‘The Noble Mirror of Art’, of 1663, Furttenbach reveals the implications of this opening. He describes subsets of ‘First’, ‘Second’ and ‘Third Clouds’. Each subset involves different mechanics: ‘First Cloud’ is a design for making a glowing cloud appear, containing a boy, at the rear end of the pit.⁴⁴⁴ It is an arrangement of clouds in a circle surrounding/framing the illusion of a box. The box has an opening $3\frac{3}{4}$ feet wide, while inside are perspective lines to make it look deeper than it is, with a real depth of two feet. Clouds are painted around the frame of this box, though these clouds are still a part of the ‘First Cloud’, that is the box, the boy, the wood, the paint, and, presumably, the people working to make it all move around. Furttenbach thus demonstrates the manner in which inputting clouds into the machine assemblage came to disassociate the referent ‘cloud’ from ecological phenomena, and even from imagistic representations of clouds painted around the frame.

Writing against the abstraction of labour involved in these cloud machines, Gerald Raunig (b.1963) has argued that Renaissance machine assemblages produce divine spectacles through virtualising the actual labour

⁴⁴⁴ Furttenbach, in *The Renaissance Stage*, pp.220–221.

and workings of the machine.⁴⁴⁵ For Raunig, the smooth running of a cloud machine is a pre-requisite for the production of spectacle. This smoothness of illusionism is a biomechanical assemblage, or the serialised ‘concatenation of human organs, technical apparatuses and social machines’.⁴⁴⁶ In line with Raunig, the Early Modern period was instrumental in associating the forms of the skies with a machine process of abstracting and extracting labour. Human labour is abstracted into the base material for producing a cloud spectacle. At the same time, the labour of clouds as ecological phenomena is abstracted and put to work in producing spectacular ideas about these ecological forms. This involves undoing any sense that the signifying function of clouds is arbitrary, instead asserting the artistic spectacle of clouds as a natural orchestration of form.

The art historian James M. Saslow (b.1947), describes the amount of labour that was abstracted in order to produce a cloud spectacle on stage. I want to quote Saslow at length, as his work on this matter is unmatched and deserves concentrated critical attention. Saslow analyses the aesthetic and social backdrop to the Medici Wedding of 1589. The wedding celebrated the marriage of Grand Duke Ferdinando de' Medici and the French princess Christine of Lorraine. The event was principally marked by a performance of Giorlamo Bargagli's *La Pellegrine*, a play with six allegorical

⁴⁴⁵ Gerald Raunig, *A Thousand Machines: A Concise Philosophy of the Machine as Social Movement*, Semiotext(e)/ Interventions, Series 5 (Cambridge, Mass.: MIT Press, 2010); *Art and Revolution: Transversal Activism in the Long Twentieth Century*, trans. by Aileen Derieg, Semiotext(e)/ Active Agents (Cambridge, Mass.: MIT Press, 2007).

⁴⁴⁶ Gerald Raunig, ‘Machinae et Orgia: Post-Revolutionary Theatre Machines in the Soviet Union of the Early Twentieth-Century’, trans. by Aileen Derieg, *Third Text*, 1.1 (2009), 25–34 (p.28).

intermezzi.⁴⁴⁷ Working across various sources, Saslow reconstructs these intermezzi:

The exact placement of this elaborate machinery cannot be determined, but its general structure and the number of stagehands needed to operate it are clear from two lists of the crew for each mechanical unit; drawn up in December and again in March, they differ in details but agree on the overall system of machines and their relative sizes. Approximately a hundred names are listed, with many individuals assigned to a different crew for each successive intermedio[...] Each of the two clouds farthest downstage[...] required its own crew of ten to twelve men, two of whom let out the coiled ropes (*anguille*, “eels”); another single winch or capstan (*argano*) with five more men was jointly connected to both clouds. The next pair[...] apparently smaller, were manipulated by a single common windlass (*verricello*) needing eleven men; each had two additional men to “fold them up” (*ripiegarsi*), suggesting that they expanded in some way. The three central clouds farthest upstage were for the most important god or allegories, all of which “came out of the heavens” of the upper background. Of these, the two flanking clouds[...] did not descend to earth and seem to have required only six men between them, while the central cloud[...], for Doric Harmony and others, required twelve men plus a “windlass in the sky” – set above the grid – with six staff.⁴⁴⁸

⁴⁴⁷ A. M. Nagler, *Theatre Festivals of the Medici, 1539-1637* (New Haven: Yale University Press, 1964).

⁴⁴⁸ James M. Saslow, ‘January & February 1589: The Theater, the Scenery, the Artists’, *The Medici Wedding of 1589: Florentine festival as Theatrum Mundi* (London: Yale University Press, 1996), pp.74-100, p.84.

It is almost difficult to imagine this intricate concatenation of intersecting theatrical labour. Building cloud machines was predicated on abstracting the labour of the workers who sweated backstage and in the wings to produce the spectacle of clouds. This labour of production is necessarily absented from the spectacle of producing a cloud on stage. Looking at the handbooks of Sabbattini and Furttentbach, it becomes apparent that even theoretical writing was complicit in this process of abstraction. More than producing clouds on stage, the labourers who worked backstage in these theatrical intermezzi worked to produce the very idea of clouds as signs or symbols.

There are traces of this move to mechanise clouds as symbols beyond theatre documents. During his collaboration with Jones, the poet and playwright Jonson wrote a scathing poem about Jones' machine assemblages, calling them 'cloudes of masques'.⁴⁴⁹ Jonson thereby refers to the whole masque as a cloud (paint, wood, cloth, and players included) as if clouds are compatible with any machinic assemblage. Likewise, in the Baroque and Early Modern visual art practice of painting clouds, clouds often appeared as clumps of paint, covering or supporting a deity, flocks of white curled around the arms or legs of an angel. Analysing the visual works of Raphael (1483-1520) and Correggio (1489-1534), the art historian Alessandra Buccheri notes that artists were 'influenced' by theatre practice, using clouds as 'platforms' or 'bubbles' for seating deities in the sky of the paintings.⁴⁵⁰ These platforms dissipate the borders of transcendental figures

⁴⁴⁹ Ben Jonson, *Cynthia's Revels, or The Fountain of Self-Love* (New York: Henry Holt and Company, 1912), p.xi, p.46-48.

⁴⁵⁰ Alessandra Buccheri, 'Platform Clouds vs Bubble Clouds: Raphael vs Correggio', *The Spectacle of Clouds, 1439–1650: Italian Art and Theatre* (Farnham, Surrey: Ashgate, 2014), pp.57-70.

into the blue backdrop of the sky, such that no devout onlooker need see their feet unrealistically hanging in the blue. On this account, the art historian Christian K. Kleinbub has suggested that ‘cloud putti’, or baby angels entangled in clouds, were ways to accommodate the supernatural within naturalistic conventions of painting.⁴⁵¹ It would undermine the perspectival naturalism of the painting to place a deity floating in the sky. Equally, it would undermine the transcendental status of angels and deities to stand them on the ground. In other words, both the naturalism of Western conventions of painting and the supernaturalism of religious conventions of deific form demand that the labour of the artist is abstracted from the work, and re-associated with the more “natural” ability of clouds to levitate in the sky and divine shapes at will.

As signs embedded within systems of sign-production, clouds are thus used to re-route machinic concatenations through ecological form. In Early Modern theatre and the visual arts, clouds are used to virtualise the labour of the artist so that the aesthetic-sign-production does not look constructed, thereby virtualising the labour of those human bodies entailed in the process of the spectacle. Input into a machinic construct, clouds are tools for virtualising the actual inner workings and procedures of their own signifying powers. These Early Modern displays and spectacles of clouds provide a backdrop to the iconographic production in the workings of the cloud concept. Ironically, it is when clouds are input into machines that they emerge as ecological referents. As exchangeable signs or working icons,

⁴⁵¹ Christian K. Kleinbub, ‘At the Boundaries of Sight: The Italian Renaissance Cloud Putto’, in *Renaissance Theories of Vision*, Ed. by John Hendrix and Charles Carman (Burlington, VT: Ashgate, 2010), pp.117-133.

clouds gain their appearance as “natural” concepts or as paradigmatic signatures of the ecology.

Chapter Three: Elastic Flocks

Each organism can be regarded as a hierarchical system of *plastic controls*—as a system of clouds controlled by clouds.⁴⁵²

Karl Popper—‘Of Clouds and Clocks’ (1965)

I liked the concept of cloud for what one would call its elasticity. (Deleuze praised me, jokingly, for having finally invented something ‘philosophical’: the ‘elastic concept’). It was a matter of dealing with the cloud as an object that would circulate from being a stage implement in the theatre to being a description in linguistic terms.⁴⁵³

Hubert Damisch—‘A Conversation’ with Stephen Bann
(2005)

This chapter is about the paradoxically rigid concept of clouds as elastic, fluctuating forms. Examining a consistent history of using clouds to figure concepts of elasticity allows me to critique the role of the cloud concept in the instantiation of flexibilisation as a structure of labour symptomatic of post-structuralist economics. I examine the role of clouds in the art-critical writings of the structuralist philosopher Hubert Damisch (b.1928), who claims to have invented an ‘elastic concept’, just as he claims to have invented a theory of clouds. I determine the racialised history of this elastic

⁴⁵² Karl Popper, ‘Of Clouds and Clocks: An Approach to the Problem of Rationality and the Freedom of Man’, *Objective Knowledge: An Evolutionary Approach* (Oxford: Clarendon Press, 1972), pp.206–255, p.245.

⁴⁵³ Damisch and Bann, ‘A Conversation’ (p.160).

concept by looking at Damisch's early writings and drawing these into dialogue with his relationship with the artist Jean Dubuffet (1901–1985). Doing so, I expose the racialised terms that permit Damisch to conceptualise clouds as the elastic “zero degree” of rigid Western painterly systems, arguing that elasticity is a form of primitivism used to justify the logic of flexibilisation and precarity in contemporary economic structures. I then move to analysing a set of nineteenth-century writers and artists who projected patriarchal ideas of agency and freedom into clouds by conceptualising clouds as elastic forms.

The service-oriented architecture of the cloud computing industry is an elastic structure that emblematises the elastic economic conditions of digital capitalism. Under these conditions, the ‘cybertariat’—the precariat of the digital economy—is structured into inescapably flexible forms.⁴⁵⁴ This implies that the biopolitical schema of the cloud computing industry is a dynamically scalable network with responsive, malleable and tirelessly versatile dimensions. Of course, this convenience comes at the cost of life. It is only thanks to the cybertariat that service-oriented computing can be rhetorically and conceptually excessively convenient.

The elastic receptivity and unprecedented convenience of computational media are sustained by oppressive global structures of outsourced labour and the expulsion of environmental waste and degradation to areas deemed less valuable.⁴⁵⁵ Within the critique of the cloud computing industry, these arguments have hinged upon seeing clouds

⁴⁵⁴ Ursula Huws, ‘Telework: Projections’, *the making of a cybertariat: virtual work in a real world* (London: The Merlin Press, 2003), pp.86–100, p.96.

⁴⁵⁵ Martinez-Alier, *The Environmentalism of the Poor* (2002).

as a ‘veil’ of immateriality that masks the material realities of computing industries.⁴⁵⁶ This chapter argues that it is not the inherent immateriality of clouds that veils such operations. There is nothing inherent about the concept of clouds as immaterial. Rather, the assumed immateriality of clouds is indicative of the concept-being of clouds as elastic forms, and it is this quality that serves to sustain the economic structures of the industry of cloud computing. Elasticity mediates between materiality and immateriality. Elasticity codifies tearing and forming into the concept-being of clouds.

By way of a leading example, in the essay, ‘Cloud Computing: Architectural Policy and Implications’, written in 2011 alongside the emergence of computing facilities such as the Amazon Cloud, GoGrid, Iland, Rackspace, Saavis and Sungard, Christopher S. Yoo attributed the market salience of cloud computing technology to its ‘service oriented architecture’.⁴⁵⁷ This architecture, led computer scientists such as the authors of the earlier 2008 essay ‘Cloud Computing and Grid Computing 360-Degree Compared’ to suggest that ‘Clouds are developed to address Internet-scale computing problems’, that they are ‘*dynamically scalable*’, ‘*driven by economies of scale*’.⁴⁵⁸ As a computational medium for implementing economies of scale, the ‘service-oriented’ architectures of this industry are malleable. In theory, these structures are so because they claim

⁴⁵⁶ Metahaven, ‘Captives of the Cloud: Part I’, ‘Captives of the Cloud: Part II’, ‘Captives of the Cloud: Part III. All Tomorrow’s Clouds’; Slavok Žižek, ‘Corporate Rules of Cyberspace’, *Inside Higher Ed* (2 May 2011), available online: <https://www.insidehighered.com/views/2011/05/02/corporate-rule-cyberspace> [accessed 21 June 2017].

⁴⁵⁷ Christopher S. Yoo, ‘Cloud Computing: Architectural Policy and Implications’, *Springer Science+Business Media*, LLC (2011) 405–421.

⁴⁵⁸ Ian Foster, Yong Zhao, Ioan Raicu, Shiyong Lu, ‘Cloud Computing and Grid Computing 360-Degree Compared’, *IEEE Grid Computing Environments* (GCE, 2008), n.p.

to respond to “user” requirements. They ostensibly allow users to enter into a ‘feedback loop’ with technology, where automation optimises the responsive output by constantly revising how a system is operating according with the input of “user” demand. In the industry of cloud computing, elastic feedback thus facilitates alluring flexibility or freedom of the “user.”⁴⁵⁹

In reality, these feedback loops enforce casualisation and exploitation, both within the ‘fringe’ where the “user” operates, and at ‘the core, where highperformance [sic] machines are linked by high-bandwidth connections, and all of these resources are carefully managed’.⁴⁶⁰ The capacity to access data in any location because it is ‘in The Cloud’, or the styles of living capabilised by companies such as Uber or Deliveroo, are down to a system that holds at bay a “‘labor” cloud’ of workers.⁴⁶¹ The capacity to access email on-the-go and to work remotely in this manner, marks a slippage between these elastic structures and the economic structures of ‘immaterial’ labour, or the demand for heightened productivity that serves to intensify labour exploitation.⁴⁶² Demands of labour nomadism, or what Johnathan Crary has called the relentless 24/7 logic of capital, offer yet another (if privileged) perspective on the unrelentingly

⁴⁵⁹ Žižek, ‘Corporate Rules of Cyberspace’.

⁴⁶⁰ Brian Hayes, ‘Cloud computing’, *Communications of the ACM*, vol. 51 (July 2008) 9-11.

⁴⁶¹ Weinman, ‘Capacity Conundrum’, *Clouconomics*, pp.125–136, pp.134–5.

⁴⁶² Lazzarato, ‘Immaterial Labor’. See also Emma Dowling, Rodrigo Nunes and Ben Trot (eds), *ephemera: theory & politics in organization* 7.1 (February 2007).

intensifying globally distributed structures of inequality implied by digital capitalism.⁴⁶³

Most pointedly, David Naguib Pellow and Lisa Sun-Hee Park highlight the precarity of life for labourers who manufacture high tech industrial goods like the semiconductor chips found in mobile devices: from those who are working at what Naguib Pellow and Park call ‘the core’ of the Silicon Valley economy, through those whose lives are endangered because they work on PC board and cable assembly lines, or what they call ‘the periphery’, all the way to thousands of Filipino, Latino, Vietnamese, Korean and Cambodian migrants working on ‘piece-rate pay’ to assemble electronic components in domestic settings, often in their own homes.⁴⁶⁴ Naguib Pellow and Park even expose how Lockhart Technologies, Inc., a circuit board assembly firm in Lockhart, a Texas prison, employ prisoners to repair and build machines for firms such as IBM and Dell.⁴⁶⁵ This research is drawn from a set of interviews carried out by investigative journalist Reese Erlich, who reveals that though ‘federal law prohibits domestic commerce in prison-made goods unless inmates are paid "prevailing wage"[...] the law doesn't apply to exports’.⁴⁶⁶ On the open market of global capital, exporting and outsourcing are two sides of the same coin. Through activating both,

⁴⁶³ Johnathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London: Verso, 2013)

⁴⁶⁴ David Naguib Pellow and Lisa Sun-Hee Park, *The Silicon Valley of Dreams: Environmental Justice, Immigrant Workers, and the High-Tech Global Economy* (London: New York University Press, 2002), pp.73–82, p.166, p.185.

⁴⁶⁵ Naguib Pellow and Park, *The Silicon Valley of Dreams*, p.185. Cf. Reese Erlich, ‘Prison Labor: Workin’ for the Man’, *Convert Action Quarterly* 54 (Fall 1995), n.p. available online <<http://prop1.org/legal/prisons/labor.htm>> [accessed 6 August 2017].

⁴⁶⁶ Erlich, ‘Prison Labor’.

labour can be flexibilised to a maximal degree, such that global capital can abstract and accumulate with an elastic responsiveness that will morph and warp in and around prospective barriers to what is effectively slave labour, such as federal law protecting incarcerated persons from exploitation.

Considering this crystallisation of flexibility within the economic structures of digital capital, the journalist Karen Southwick has dubbed Silicon Valley the ‘birthplace’ of the ‘permanent temp’.⁴⁶⁷ The oxymoron of the ‘permanent temp’ gives way to the more generalised paradox of crystalized flexibility. Our love affair with the industrial phenomenon of cloud computing is thus, first and foremost, as Richard Maxwell and Toby Miller have suggested, our complicity in the ‘dirty’ and destitute elastic structures of capital, allowing temporary and capricious modes of life to concretise into permanently temporary ways of being for assembly line workers, migrant domestic labourers and the incarcerated who are working behind the scenes to sustain the spectacle of digital capitalism.⁴⁶⁸

Under the guiding notions of the digital economy, elasticity has been sited, conceptualised and automated into a precarious state of permanence. Accordingly, for several writers ‘*flexibility*’ and ‘*elasticity*’ have become keywords for current trends in social, aesthetic and economic norms. For Ursula Huws, for instance, flexibility is a key word for thinking about the ‘restructuring of organizations to make them leaner and better able to

⁴⁶⁷ Karen Southwick, ‘High-Tech Industry Relies on Temporary Work Force’, *San Jose Mercury News*, (7 December 1984).

⁴⁶⁸ Richard Maxwell and Toby Miller, ‘Our Dirty Love Affair with Technology’, *Soundings*, 54 (Summer 2013), 115–126.

respond quickly to market changes'.⁴⁶⁹ Equally, flexibility is a key word for reading domestic and remote labour; as atomizing work into temporal units which people must move between elastically in rapid, imperceptible passages between work and leisure.⁴⁷⁰

Indeed, this logic of elasticity is not limited to the sphere of the digital economy and its diagnostics. Rather, I am struck by the proximity between the words *flexibility* and *elasticity*, and comparable terms from art and theory. In 1996, Krauss and Yve-Alain Bois co-authored *Formless: A User's Guide*, a catalogue for the Centre-Pompidou in Paris, offering 'formlessness' as a paradigm for contemporary art practice.⁴⁷¹ Hal Foster suggestively prefaces his *Bad New Days* (2015) with a paraphrase of Bois and Krauss, suggesting that the formless has been central to post-1970s restructuring processes in aesthetic conventions and art institutions.⁴⁷² If the 'formless' is now a programme of art, as Foster claims, then this programme overlaps with the social programme of elasticity. In the art world, this programme of elasticity mobilises an entire alphabet of aesthetic operations of the formless, running from 'base materialism' through 'dialectic,' 'kitsch,' 'liquid words,' 'part object[s]' to the 'uncanny'. To these I would add the terms: 'diverse,' 'dynamic' and 'ephemeral,' along with the 'manifold,' the 'multiple,' and the 'transient'. These art-critical terms are

⁴⁶⁹ Huws, 'Telework: Projections', p.96; Boltanski and Chiapello, 'Management Discourse in the 1990s', *The New Spirit of Capitalism*: 'We have dubbed this new 'city' the *projective city* with reference to the flexible world, composed of multiple projects conducted by autonomous persons, whose picture is painted by management authors', pp.57–102, p.92. *See also* Boltanski and Chiapello, 'The Formation of the Projective City', pp.103–164.

⁴⁷⁰ Huws, *the making of a cybertariat* (2003).

⁴⁷¹ Yve-Alain Bois and Rosalind Krauss, *Formless* (1997).

⁴⁷² Foster, *Bad New Days* (2015).

concurrent with the catalogue of terms synonymous with a state of elasticity.

These semantics were instated in the early 1970s, Ricardo Antunes purports, following the student and worker uprising of May 1968 in France and Italy's 'Hot Autumn' in 1969.⁴⁷³ In the late 1960s, what István Mészáros calls the 'structural crisis of capital' led to social and intellectual 'experiments' with flexibility and structural instability, in the early 1970s.⁴⁷⁴ As Robert Brenner, critical analyst of economic turbulence and neoliberalism purports, we are living in the post-1970s wake of these experiments with elasticity.⁴⁷⁵ Elasticity thus puts crisis into play—elasticity programmes crisis as the logic of capital. That is, elasticity articulates the crisis of break, rupture, tear or rent, as a structural programme of already-tearing, already-rupturing, already-irrupting flexible forms.⁴⁷⁶ Elasticity is crisis in its structural becoming—the becoming-structure of crisis.

Looking at contemporary forms of labour under the conditions of globalisation, Antunes calls the ideological programme of elasticity a

⁴⁷³ Ricardo Antunes, 'Freeze-dried flexibility: a new morphology of labour, casualisation and value', *work organisation labour & globalisation*, 5.1, Special Issue: Passing the Buck: corporate restructuring and the casualisation of employment, ed. by Ursula Huws (Spring 2010), 148–159 (pp.148–9).

⁴⁷⁴ István Mészáros, *The Structural Crisis of Capital* (New York: Monthly Review Press, 2010). See also Ricardo Antunes, 'The New Morphology of Labour and its Main Trends: Informalisation, Precarisation, (Im)materiality and Value', *Critique*, 44.1–2 (2016), 13–30.

⁴⁷⁵ Robert Brenner, *The Economics of Global Turbulence: The Advanced Capital Economies from Long Boom to Long Downturn, 1945–2005* (London: Verso, 2006).

⁴⁷⁶ Ricardo Antunes, 'Toyotism and the New Forms of Capital-Accumulation', *The Meanings of Work: Essay on the Affirmation and Negation of Work*, trans. by Elizabeth Molinari, Historical Materialism Book Series, vol. 43 (Leiden: Brill, 2013), pp.32–43, p.33; Mészáros, *The Structural Crisis of Capital* (2010).

‘freeze-dried flexibility’, following Juan Castillo’s suggestion that labour processes have undergone ‘organisational lyophilisation’.⁴⁷⁷ Both Castillo and Antunes imply that elasticity has been systemically implemented and crystallised, somehow, paradoxically, into a rigid form of work. That is, elasticity is imposed upon the individual to help eliminate unproductive labour, thereby intensifying exploitation.⁴⁷⁸ Flexibility fixes tearing and forming into a formula of what a bodily form is conditionally capable of doing, and mediates the intensification of exploitation that a flexible market requires, passing this into an ontological category of subjectivity.

This aspiration toward elasticity hence conditions the digital precariat, or what Huws has termed the ‘cybertariat’, into the perpetual strife of being.⁴⁷⁹ In one manner, the logic of elasticity entails the molecularisation of crisis. It does do by securing the totality of the market-as-elastic by nucleating insecurity and instability to the individuals who perform subject to its dominant logic.⁴⁸⁰ This atomisation of structural tearing means that the inevitable crisis or tear of Marxian dialectics of value falls to the individual. Flexibilised or casualised individuals perform these atomic crises in their daily life: moving from job to job, descending constantly into unemployment status; people living on “zero hours” contracts; or working in unseen and invalidated ways exist in an elastically uncertain state of becoming. This ideology of flexibility lends weight to the

⁴⁷⁷ Antunes, ‘Toyotism’, ‘Freeze-dried flexibility’ and ‘The New Morphology’. Cf. Juan J. Castillo, *Sociología del Trabajo* (Madrid: CIS, 1996); ‘A la Búsqueda del Trabajo Perdido’ in *Complejidad y Teoría Social*, ed. by A. Perez-Agote and I. Yucera (Madrid: CIS, 1996).

⁴⁷⁸ Antunes, ‘Freeze-dried flexibility’.

⁴⁷⁹ Huws, *the making of a cybertariat* (2003).

⁴⁸⁰ Antunes, ‘Freeze-dried flexibility’.

entrepreneurialism of employment in the global North (free-lancing, ‘*perpetual training*’, and creative labour), inviting subject-formation through a self-disciplined flexibility of work and life, even while it maximises exploitation in the global South.⁴⁸¹ On a macro-scale, the ideology of elasticity allows for a flexible market, where turbulence, crisis and fluctuation have been gradually integrating into the global economic system since the early 1970s.

Just as Judith Butler has claimed that some lives must accord with the metaphysical programme of precarity, and just as Achille Mbembe has purported that humans live or die by a necropolitical logic of being and non-being, I would argue that the globalised capitalist logic of ‘flexible accumulation’ implies that the elastic concept become automated as a working metaphysical framework for making sense of the world: as conceivable, as thinkable, and as a site for human action.⁴⁸² Precariousness is resolved into a fixed form when we think of life as inherently elastic. In such thinking, elasticity becomes the continuum within which individual instances of exploitation are foretold, and thus certain to go unquestioned.

The socioeconomic model of ‘flexicurity’ (a shorthand for flexible-security) serves to demonstrate how the machinations of flexibility can be paradoxically secured and fixed through this projective content. Introduced by the Danish social democratic Prime Minister Poul Nyrup Rasmussen in the 1990s, this emerging rhetoric has been celebrated by economists Peter Flaschel and Alfred Greiner, as a means of reconciling the post-1970s ideal

⁴⁸¹ For ‘*perpetual training*’ as facet of the flexible world, see Deleuze, ‘Postscript’ (p.5).

⁴⁸² Judith Butler, *Precarious Life: The Power of Mourning and Violence* (London: Verso, 2004); Mbembe, ‘Necropolitics’.

of ‘flexible accumulation’ with the United Nations *Universal Declaration of Human Rights*.⁴⁸³ They propose using the welfare state of educational provisions as an egalitarian base for society, in order to secure flexible working and living conditions. This is intended to bypass the violent structuring of social bodies into uneven and unequal forms, so that society can be elastic yet equal. Flexicurity is an elastic socialism, which compounds security and flexibility by leaning on the welfare state to support atomised dynamism. The portmanteau linguistically compounds social-critical demands for security and art-critical demands for autonomy into a dualism of governable, securitised self-determination.

As an iconic form with an ideological content, the cloud concept figures the paradox of flexicurity, of structural instability, and of regimes of self-determination. Clouds are fixed images of unstable forms. This iconographic content of clouds is so stabilised that it is difficult to separate clouds from ideas of becoming, change, fluctuation, precarity or instability. These ideas are perpetuated by the industry of cloud computing, which markets the implementation of dynamically scalable computational logic as an object of neoliberal desire. What is absent from the ideological content of the cloud concept is any clear bridge between this computational logic and its social and political histories and implications. Hence, in the forthcoming work, I will turn to the writings of French philosopher and art-critic Damisch. Damisch was embedded in the late twentieth-century milieu of French post-structuralist thought, to which Antunes attributes the

⁴⁸³ Peter Flaschel and Alfred Greiner, *Flexicurity Capitalism: Foundations, Problems, and Perspectives* (Oxford: Oxford University Press, 2012).

beginnings of ideological experiments with elasticity.⁴⁸⁴ Damisch is most famous for his theorisation of the role that clouds have played in the history of art. I will work through Damisch's *oeuvre* tracing an elastic concept that appears in his thinking about clouds and across his other writings about art, culture and philosophy. Doing so will permit me to re-tell the social and political history of this idea of elasticity, building a bridge to the latter part of the chapter where I look at nineteenth-century art, art theory and science.

Primitivism and Clouds as the "Zero Degree"

Part One: Damisch's Elastic Concept

Yve-Alain Bois reflects on being urged by Roland Barthes to attend Damisch's seminar series in Paris, first on Bauhaus between 1971-72, then on semiology between 1972-73.⁴⁸⁵ In conversation with Stephan Bann, Damisch fondly remembers this time in Paris as the period through which he developed his philosophy of the 'elastic concept'.⁴⁸⁶ He reminisces:

I liked the concept of cloud for what one would call its elasticity. (Deleuze praised me, jokingly, for having finally invented something 'philosophical': the 'elastic concept'). It was a matter of dealing with the

⁴⁸⁴ Antunes, 'Toyotism', 'Freeze-dried flexibility' and 'The New Morphology'.

⁴⁸⁵ Yve-Alain Bois, 'Tough Love', *Oxford Art Journal*, 28.2 (2005), 247–255 (pp.249–255).

⁴⁸⁶ Damisch and Bann, 'A Conversation' (p.160).

cloud as an object that would circulate from being a stage implement in the theatre to being a description in linguistic terms.⁴⁸⁷

Damisch speaks of clouds as concepts with elastic qualities, before suggesting that he invented this concept, this model of clouds. There are salient similarities between this projection of an elastic concept in Damisch and his contemporary Serres, who featured in the previous chapter. Damisch describes a semiological project of preparing and projecting a philosophy of elasticity captured in a grammar of clouds—as if clouds are abstractable from the ecology yet remain operable as ecological referents. Elasticity is the object-ontology of clouds in Damisch's work, such that both elasticity and clouds can become operable as a unified linguistic term. Damisch hence disassociates clouds from the ecology, permitting him to re-assert elasticity as ecological fact, of clouds as objects. Doing so, Damisch also alludes to the central paradox of the fixity of elasticity. In fact, this structuration of clouds commands a further conjunction to the material under analysis in chapter one of this thesis. In conversation with Bann, the way Damisch relates elasticity and linguistics is reminiscent of Vernant's contemporaneous work on clouds as a constitutive tear in the social—a connection that will become ever more apparent as I delve deeper into the history of Damisch's thinking about clouds.

This chapter hence engages directly with the idea of elasticity, but engages more covertly with the work that I have been doing in chapter one and two. It is worthwhile noting these connections. These connections begin to allude to the fact that elasticity runs across both the aspect of the cloud

⁴⁸⁷ Damisch and Bann, 'A Conversation' (p.160).

concept as a socially transgressive tear where all humans co-exist or in its mechanical function as a tool that abstracts labour into a spectacular production. As I will analyse much further, in the conclusion to this work, these conjunctions exist on account of the overall concept of clouds as tearing and forming. The assumption of a transgressive tear that gives form to humans implies that just as clouds are tearing they are forming, or giving form. Likewise, the tool that abstracts labour is equally the tool that tears labour, or the tool that re-associates labour with divine edict, giving form to the spectacular production. Elasticity or flexibility must to some extent be thought of as the sum of this paradoxical concept. A concept that can tear and form must be an elastic or flexible procedure. Hence, the following will perhaps deal most exhaustively with the social and political realities of accumulation by dispossession, as inclusively argued throughout this thesis thus far.

Damisich first established this inseparable relationship between elasticity and clouds in 1958, in a long essay published in the *Revue d'esthétique*, entitled ‘un “outil” plastique: le nuage [a plastic “tool”: the cloud]’.⁴⁸⁸ The title implies that clouds are ‘plastic’—malleable and open to material manipulation without danger of permanent warp or weft. The opening claim is that of breaking the solid mould of art historicism.

⁴⁸⁸ Hubert Damisich, ‘un “outil” plastique: le nuage’, *Revue d'esthétique*, publiée sous la direction de Étienne Souriau et Raymond Bayer, Tome Onze, Fascicule 1&2, Librairie Philosophique J. Vrin, Paris (Janvier–Juin 1958), 104–148. This essay is yet to be translated into English. In fact, in spite of the renewed excitement for Damisich’s work on clouds the essay is rarely referred to in the secondary literature. I have opted to leave excerpts intact so as to bring them to light in their original French language version. Renderings and interpretations in the body of my own writing are my own, with thanks to Max-Louis Raugel and Kéline Gotman.

Damisch is resistant to what he sees as the reduction of art to historicist critique. He gives a broad assessment of the problem of historicism—‘la variété même des méthodes dont usent les spécialistes pose un problème’—stating that the problem extends across art criticism, before framing this problem as a failure to capture ‘la réalité essentielle’—the essence, the real—of artistic form.⁴⁸⁹ Damisch thereby questions the rigidity of critique and historicist hermeneutics because, even with a variety of methods and ‘spécialistes’, art criticism is failing to capture the ‘purement formelles’, ‘comme système’ or ‘la langue’ of visual art, as Henri Focillon seeks in *Vie des formes* (1947), and that Ferdinand de Saussure has ostensibly realised in his structuralist semiotics.⁴⁹⁰ Having meditated thus, Damisch then dramatically introduces what will become the ecological emblem of his structuralist hermeneutics of visual art for the next 30 years:

Comment il nous est possible de la lire, pourquoi l’esthéticien ne peut se satisfaire d’analyses strictement internes ni se contenter d’«éclairer» les œuvres de divers points de vue exclusifs, mais doit s’efforcer d’intégrer les différents moyens d’approche dont il dispose en une seule méthode totalisante, c’est ce que nous nous proposons de rechercher dans les pages qui suivent, en étudiant un élément essentiel du système figuratif élaboré par les artistes de la Renaissance : le nuage.⁴⁹¹

⁴⁸⁹ Damisch, ‘un “outil” plastique: le nuage’ (pp.104–148).

⁴⁹⁰ Damisch, ‘un “outil” plastique: le nuage’ (p.105–6). Cf. Henri Focillon, *Vie des formes*, 3^e édition ([Paris: Press universitaires de France,] 1947), p.9, p.29, p.16; Ferdinand de Saussure, *Cours de Linguistique générale* ([Paris: Payot, 1931]). p.30.

⁴⁹¹ Damisch, ‘un “outil” plastique: le nuage’ (p.107).

Clouds or ‘the cloud’ (‘le nuage’) make it possible to read (‘lire’) across the figurative system (‘système figuratif’) of Renaissance artists. This is because clouds are an ‘élément essentiel du système figuratif’, meaning a non-figurative form occasioning a generalised analytical condition of Renaissance art. For Damisch, clouds are essential elements. Hence, this art-theoretical essay seeks to brutalise clouds as base origins of art. The object-ontology of clouds as plastic is key to this origin narrative. Damisch continues to elaborate that:

En effet, le nuage n’est seulement un élément du vocabulaire plastique, dont nous contenter de retracer l’évolution morphologique, depuis les strato-cumulus qu’on observe dans les mosaïques byzantines jusqu’aux cumulo-nimbus gonflés comme des ballons qu’on trouve dans les toiles cubistes de Léger ou de Delaunay. Autant qu’on accessoire pittoresque ou symbolique, il est — au sens où les linguistes parlent d’«outil» linguistiques — un outil plastique que définit une certaine *valeur d’emploi*. Il n’a pas seulement une valeur lexicale, de désignation, mais a souvent été utilisé pour sa valeur syntaxique — en tant, par exemple, qu’il permettait de relier des éléments distincts, de les intégrer en un discours cohérent. L’étude de la fonction que remplit un outil plastique dans un système figuratif doit nous donner accès à ce system lui-même, s’il est vrai qu’un signe n’a pas de valeur en lui-même, mais en tant seulement qu’élément d’une totalité’.⁴⁹²

The plasticity of clouds is a tool for traversing the totality of art as a representative system. By asserting clouds as elastic forms, Damisch begins

⁴⁹² Damisch, ‘un “outil” plastique: le nuage’ (p.121).

to theorise about the inelastic, rigid systems of conventions of Western art. More, Damisch here speaks on the register of the concept or language-being of clouds thereby seeking to argue that clouds are the origin of art *in its representative forms*, as if art springs from clouds, and it is for this reason that clouds can be transhistorical tools for reading or interpreting art. Indeed, reading how Damisch theorises clouds in both his own work and in conversation with other art historians, one is continuously struck by the crossovers between these works and the essentialist language of dispossession and expropriation.

In a 1998 conversation, Damisch tells his ex-student Bois, ‘the cloud is the zero degree of painting[...] a theoretical object[...] exceptional within the system’.⁴⁹³ Borrowing this phrasing, Stephen Melville explains that Damisch’s ‘theoretical object[s]’ are the ‘vanishing point’ not of painting but of the visible, which is elaborated or unfolded through ‘a hole, a boring through material depth’.⁴⁹⁴ If we annex this onto Damisch’s work then the idea seems to be that clouds are essential objects in an otherwise systematic field of perception; that only clouds are not true to the system that determines how we receive the visible—and that this non-truth is the essential truth of clouds. This essentialism has trickled from Damisch’s work into its critical reception, with Melville referring to the ‘essential object’ of the visible, and Krauss, often in dialogue with Damisch, arguing that clouds are ‘unanalyzable’, surfaceless, ‘immeasurable’, too ubiquitous

⁴⁹³ Hubert Damisch, Yve-Alain Bois, Denis Hollier and Rosalind Krauss, ‘A Conversation with Hubert Damisch’, *October*, 85 (Summer 1998), 3–17 (p.8).

⁴⁹⁴ Stephen Melville, ‘Object and Objectivity in Damisch’, *Oxford Art Journal*, 28.2 (2005), 185–189 (pp.188-189).

to be definable, ‘a differential marker in a semiological system’, ‘unknowable and unrepresentable’ or ‘the lack in the centre of that knowledge, the outside that joins the inside in order to constitute it as an inside’.⁴⁹⁵ Krauss has evidently been captivated by Damisch’s theory, suggesting that clouds are the ‘undepictable element’, clarifying that ‘we need to grasp it as a structure not as a referent’.⁴⁹⁶

This mode of thinking depicts the system as a construction that rises up around the venerated base of a surfaceless and essential centre. Writers such as Robinson, Patterson, Melamed and Singh have worked to draw out the racialised logic of this veneration of the “zero degree”, whilst the likes of Alys Eve Weinbaum, Federici, Nicole Cox, Leopoldina Fortunati and Saidiya Hartman have further analysed the gendering of racialised production of abjection, through the critique of domestic, affective or informalised labour.⁴⁹⁷

The very concept of ‘form [as] the condition of possibility for structure’, as Damisch describes clouds, hence echoes the language of expropriation analysed by the aforementioned theorists as participating in

⁴⁹⁵ Melville, ‘Object and Objectivity in Damisch’, p.189; Krauss, ‘The /Cloud/’, pp.155–165.

⁴⁹⁶ Rosalind Krauss, ‘The Grid, the True Cross, the Abstract Structure’, *Studies in the History of Art*, 48, Symposium Paper XXVIII, Piero della Francesca and His Legacy (1995), 302-312 (pp.309-311).

⁴⁹⁷ Robinson, *Black Marxism* (1983); Patterson, *Slavery and Social Death* (1982); Melamed, ‘Racial Capitalism’; Singh, ‘On Race, Violence and So-Called Primitive Accumulation’. Alys Eve Weinbaum, ‘The Afterlife of Slavery and the Problem of Reproductive Freedom’, *Social Text* 115, 32.2 (Summer 2013), 49-68 (pp.53–54); Silvia Federici with Nicole Cox, ‘Counterplanning from the Kitchen (1975)’, *Revolution at Point Zero*, pp.28–40; Leopoldina Fortunati, *The Arcane of Reproduction: Housework, Prostitution, Labor and Capital* (Brooklyn, NY: Autonomedia, 1995); Saidiya Hartman, ‘The Belly of the World: A Note on Black Women’s Labor’, *Souls*, 18.2 (January–March 2016), 166–173.

capitalist accumulation by dispossession.⁴⁹⁸ It is hence equally striking how much Damisch has come to the attention of the arts over the last decade, gaining much attention in secondary literature, with no suggestion that his cloud concept might map onto the primitivist discourse of the structuralist writers to whom he refers in ‘un “outil” plastique’.⁴⁹⁹ This critical reception of Damisch’s work centres on his book-length treatment of clouds, namely *Théorie du /nuage/: pour une histoire de la peinture [A Theory of /Cloud/: Toward a History of Painting (2011)]* (1972). This much-cited work is best read as an extension of the 1958 essay about clouds in Renaissance art, expanded schematically to include art from the Baroque period to the early twentieth century, with an afterword to non-Western artists.⁵⁰⁰ In the title, Damisch places slashes around ‘/cloud/’ to syntactically purify clouds into surfaceless lack (creating the ‘purement formelles’ that Focillon appraises).⁵⁰¹ As such, clouds are conceptually crystallised into anti-systematic exceptions. As conceptual forms, clouds guarantee their role as the elastic event of non-form. This book hence signals both the expansion of and Damisch’s retreat away from his 1958 essay, as Damisch moves toward the implementation of clouds as a programme of understanding all

⁴⁹⁸ Hubert Damisch, ‘Remarks on Abstraction’, *October*, 127 (Winter 2009), 133–154 (p.153).

⁴⁹⁹ Damisch, ‘un “outil” plastique: le nuage’ (p.105-6). Focillon, *Vie de formes*, p.9, p.29, p.16; de Saussure, *Cours de Linguistique générale*, p.30.

⁵⁰⁰ Damisch, ‘Our Sheet’s White Care’, *A Theory of /Cloud/*, pp.182–248. See subsections entitled ‘china and its cloud’, ‘those who draw clouds and those who blow them’, ‘the brush stroke’, ‘flesh and bones’, ‘“hua”/delimitation’, ‘opening chaos’, ‘yin/yang’, ‘citations’, ‘the inscription of emptiness’, pp.220–225.

⁵⁰¹ Focillon, *Vie de formes* (1947).

structured perception.⁵⁰² In this work, clouds are no longer a method for drawing together Renaissance artworks, but a categorical ‘subterfuge that introduces into the representational circuit a direct reference to external reality’.⁵⁰³

This schematic extension of the central concept of the 1958 essay intensifies the overlay between Damisch’s language and the language of expropriation. Damisch’s extended meditation on clouds is so over-run with phraseology that unmitigatedly chimes with the discourse of dispossession, the task of selecting an exemplary passage proves arduous. Here is a text where ‘/cloud/[...] marks the closure of the system[...] through its lack of any strict delimitation, its “surfaceless body.”⁵⁰⁴ This conception of the constitutive body that is beyond surface is reminiscent of Robinson’s analysis of the joint dynamic of negation and unity at work in ‘the ideograph of Blacks’, signifying a ‘different species, an exploitable source of energy (labor power) both mindless [...] and insensitive’.⁵⁰⁵ Through this language, the conceptual production of clouds in Damisch maps neatly onto the conceptual production of abject-subjects that Robinson argues grounds a capitalist logic of exploitation: via the production of human form as negation, mindless and insensitive, or, in the words of Damisch, as ‘the most diverse [of] forms’; form with ‘no reality apart from that assigned to it by the representation’; the epitome of the ‘ambivalence of the sign’; ‘that which is unsayable (undepictable) but which nevertheless, as such,

⁵⁰² Damisch, *The Origin of Perspective [L’Origine de la perspective]* (1994 [Paris: Flammarion, coll., 1987]).

⁵⁰³ Damisch, ‘Syntactical Space’, *A Theory of /Cloud/*, pp.82–124, p.123.

⁵⁰⁴ Damisch, ‘Our Sheet’s White Care’, p.184.

⁵⁰⁵ Robinson, ‘The Process and Consequences of Africa’s Transmutation’, *Black Marxism*, pp.71–100, p.81.

continues to “work within” the system’ as a definitive outside that constitutes the inside as structure.⁵⁰⁶ This rumination on the elasticity or plasticity renders clouds as the “zero degree” of painting. The preparation of this idea of clouds replicates the prototypical production of abject-subject as the “zero degree” of the concept of “human.” It hence carries connotations of how the ‘conception of humanity was molded’.⁵⁰⁷

These overlaps are not an accident of language. Rather, the historiographic qualities of Damisch’s writings serve to explain the racialised conceptual texture of his work. Damisch wants to trace his elastic concept to the concept-being of clouds, as if the idea of a plastic “zero degree” had sprung from the ecological reality of clouds. However, in citing Damisch’s elastic concept, Gilles Deleuze and Félix Guattari refer their readers elsewhere. In *Qu’est-ce que la philosophie?* [*What is Philosophy?*] (1991) Deleuze and Guattari reference Damisch’s elastic concept, citing Damisch’s 1967 preface to *Prospectus* (Vols. 1/2, 1967), a collection of writings by the artist Jean Dubuffet, edited by Damisch. They write:

... le plan, le vide, l’horizon. Il faut l’élasticité du concept, mais aussi la fluidité du milieu [Both elasticity of the concept and fluidity of the milieu are needed.]’.⁵⁰⁸

⁵⁰⁶ Damisch, ‘Our Sheet’s White Care’, p.188, p.184, p.185; ‘The Powers of the Continuum’, pp.125–181, p.126.

⁵⁰⁷ Robinson, ‘The Process and Consequences of Africa’s Transmutation’, p.81.

⁵⁰⁸ Gilles Deleuze and Félix Guattari, ‘Le plan d’immanence’, *Qu’est-ce que la philosophie?* (Paris: Les Éditions de Minuit, 1991), pp.38-59, p.38-39. English language edn.: Gilles Deleuze and Félix Guattari, ‘The Plane of Immanence’, *What is Philosophy?*, Trans. by Hugh Tomlinson and Graham Burchill (London: Verso, 2011), pp.35-60, p.36.

They append this with the following note:

Sur l'élasticité du concept, Hubert Damisch, Préface à *Prospectus* de Dubuffet, Gallimard, I, p.18-19 [On the elasticity of the concept, see Hubert Damisch, preface to Jean Dubuffet, *Prospectus et tous écrits suivants*, vol. 1 (Paris: Gallimard, 1967), pp.18-19].⁵⁰⁹

The work, to which Deleuze and Guattari refer, is entitled 'Le véritable Robinson [the real Robinson]', a preface written for publication in *Prospectus* and later reprinted in Damisch's *Ruptures Cultures* (1976).⁵¹⁰ Here, Damisch celebrates the anti-aesthetic/anti-academic qualities of "art brut," the art movement pioneered by Dubuffet, literally translated as "raw art." The preface celebrates Dubuffet for liberating himself from the restrictions of academic art, and for discovering "raw" aesthetic practice. Through the title 'Le véritable Robinson [the real Robinson]', Damisch means to align Dubuffet with the fictitious exile Robinson Crusoe, who is shipwrecked on a Caribbean island in Daniel Defoe's *The Life and Adventures of Robinson Crusoe* (1719).⁵¹¹ Damisch asks, 'isn't playing at being Robinson the very pinnacle of art or philosophy each one of us tries for?'⁵¹² In this veneration of Robinson Damisch paints this ideographic figure of settler-colonialism as a model of de-institutionalised creativity, on

⁵⁰⁹ Deleuze and Guattari, 'Le plan d'immanence', pp.38-59, p.39. English language edn.: Deleuze and Guattari, 'The Plane of Immanence', p.220, n.1.

⁵¹⁰ Hubert Damisch, 'Le véritable Robinson', in Jean Dubuffet, *Prospectus et tous écrits suivants*, édition et présentation, 2 vol. (Paris: Gallimard, 1967), pp.9-22; Repris dans *Ruptures Cultures*, 1976, p. 35-53.

⁵¹¹ Daniel Defoe, *The Life and Adventures of Robinson Crusoe* (New York: Penguin, 1965 [1719]).

⁵¹² Hubert Damisch, 'Robinsonnades II: The Real Robinson', trans. by Rosalind Krauss, *October* 85 (Summer 1998) 28-40 (p.32).

account of his working so creatively with the “raw” materials of the island where he is shipwrecked.

Damisch depicts Robinson as a wandering artist, producing art from “raw” materials that he surreptitiously chances upon. For Damisch, Robinson is an isolated artist free from the academic constrictions of art, creatively using land, resources and indigenous people. Undermining this idealistic depiction of Robinson, Derrida has critiqued the dialectics of racism that produce the native figure of Friday, a critique that could be broadened to highlight the settler-colonial attitude that Robinson first adopts toward land and resources, prior to Defoe’s introduction of Friday.⁵¹³ In accordance with Derrida’s work, Stephen Hymer has since claimed that in order to accumulate commodities and vital labour, Defoe depicts Robinson as producing a *concept* of Friday, ‘not as a person but as a sort of pet, a mindless body that is obedient and beautiful’.⁵¹⁴ Robinson equally conceptually basifies the island and its resources, within Defoe’s depiction. The fictional Robinson appropriates land and resources as ‘mindless’, savage, ‘obedient’ and “raw”, just as he produces the native figure of Friday. Robinson is hence isolated only insofar as he is shown to perceive himself as existing in isolation, through conceiving of land, resources and people as “raw” materials for designing and pursuing his own prosperity.

⁵¹³ Jacques Derrida, *The Beast and the Sovereign*, vol. 1 (Chicago: Chicago University Press, 2004); Robinson, *Black Marxism* (1983); Patterson, *Slavery and Social Death* (1982); Vora, *Life Support* (2015).

⁵¹⁴ Stephen Hymer, ‘Robinson Crusoe and the Secret of Primitive Accumulation’, *Growths, Profits and Property: Essays in the Revival of Political Economy*, ed. by Edward J. Nell (Cambridge: Cambridge University Press, 1980), pp.29-40, p.35.

This reading of Robinson could be subjected to analysis under Marx's notion of primitive accumulation.⁵¹⁵ As noted previously, Marx does not so much describe the historical transition from feudal to capitalist society, as allude to a sustaining process of expropriation, or rather, the on-going necessary conditions for capitalist production. This involves the usurpation of land and property and the expropriation of populations, who, degraded and displaced, are thereby produced as the labour embodiment of capital.⁵¹⁶

In conversation with Bois, Denis Hollier and Krauss, Damisch reflects upon the Robinson he describes in the 1967 preface, stating that '[when] Robinson Crusoe is beached on his island he has very few things, but importantly, not nothing: a rifle, nails, a hammer. And he has to start from zero'.⁵¹⁷ This idea of the "zero" is shot through with the language of settler-colonialism, already seen in Damisch's theorisation of clouds. He produces an image of the Caribbean island as the 'primordial ground for humankind', depicting the island as a pre-historical, 'elementary' space.⁵¹⁸ For Damisch, just as the representative system of painting emerges through the working "zero degree" of clouds, Robinson's Empire on the island, which he builds over the course of some twenty-eight years, starts with eliding Friday's status as human and appropriating his land, turning both into the living embodiment of a subterfuge.⁵¹⁹ Both Friday and the island are the venerated and submissive "zero degree" that is hence unspeakable. It

⁵¹⁵ Marx, *Capital*, vol. 1, pp.501-542.

⁵¹⁶ Marx, *Capital*, vol. 1, pp.501-542.

⁵¹⁷ Damisch, Bois, Hollier and Krauss, 'A Conversation with Hubert Damisch' (p.6).

⁵¹⁸ Damisch, 'Robinsonnades II: The Real Robinson' (p.36, p.28).

⁵¹⁹ Defoe, *Crusoe* (1719).

is this brute and unsayable beauty of Friday that helps Robinson to prosper on the island.

As with Damisch's 1958 essay, the unspeakable is bound to Damisch's working theorem of elasticity. Where in the 1958 essay the elastic concept is a figuration of clouds, here Damisch prefaces the elastic concept as a resistance to the Hegelian "Idea," which Damisch also terms 'the concept'.⁵²⁰ Expressive of Hegel's subordination of art to culture, the concept is the 'true function' that delimits art, and hence, 'art then becomes an object of mere representations'.⁵²¹ With the figures of Dubuffet and Robinson typographically articulating an ideal image of the new '*man of culture*' who can operate beyond 'the concept'—as man moving away from an institutionally disclosed being toward an artistically entrepreneurial figure—Damisch introduces the elastic concept as a theorem of form 'freed from the socialized forms of art and its official norms and methods', or as 'outside the usual circuits of cultural production and consumption'.⁵²²

The historical realities behind this idea of Dubuffet as a liberated artist reveal the undergirding settler-colonial structures that permitted "art brut" to be born as an art form. In Kent Minturn's historicisation of "art brut," he details Dubuffet's correspondence with Claude Lévi-Strauss (1908–2009), describing Dubuffet's trips to Algeria between 1947–1949.⁵²³ In Dubuffet's correspondence and essays from this time, the anti-aesthetic of "art brut" is informed by an appropriative stance toward indigenous

⁵²⁰ Damisch, 'Robinsonnades II: The Real Robinson' (p.35).

⁵²¹ Damisch, 'Robinsonnades II: The Real Robinson' (p.35).

⁵²² Damisch, 'Robinsonnades II: The Real Robinson' (p.38).

⁵²³ Kent Minturn, 'Dubuffet, Lévi-Strauss, and the Idea of Art Brut', *RES: Anthropology and Aesthetics*, No. 46, Polemical Objects (Autumn, 2004), pp.247–258.

cultures, such as the Bedouins of the Saharan region, whose language he hears as ‘Arabic jargon’ and later transposes into French phonetics.⁵²⁴ In this vein, Dubuffet developed the register of “art brut” through the dialectics of bestiality and sacralisation, primitivism and value-conferral that recapitulate the paradoxical modes of thought found in Lévi-Strauss’s contemporary ethnographic writings.⁵²⁵ Evidently, any ostensible “freedom” of “art brut” depended upon ensnaring indigenous cultures into Dubuffet’s utilisation of their life as “raw” material for his aesthetic practice.

The elastic concept is hence appended to the conceptual-personae of Damisch’s construct of Robinson and Dubuffet. Robinson in fiction and Dubuffet in aesthetics, visit a land and population disclosed as primordial in order to operate in a “raw” margin, beyond the usual circuits of cultural production. These fictional–colonial registers are compounded in Damisch’s theorem of elasticity. At the end of the 1967 preface, Damisch anticipates how he would later think of clouds as the elastic “zero degree” of painting, by extrapolating the terms of the elastic concept into an image of a primordial ground of philosophy, art, culture, work and history. The section is titled *d’une philosophie qui saurait tirer avantage de l’élasticité des concepts et notions* [concerning a philosophy that would know how to make use of the elasticity of concepts and ideas].⁵²⁶ Here he writes:

⁵²⁴ Minturn, ‘Dubuffet, Lévi-Strauss, and the Idea of Art Brut’, pp.247-258. Cf. Jean Dubuffet, letter to Raymond Queneau, dated October 30, 1950, in *Prospectus* I, pp.481–483; Lévi-Strauss, ‘New York in 1941’, *The View From Afar*, trans. by Joachim Neugroschel and Phoebe Hoss (New York: Basic Books, 1985), pp.258–267.

⁵²⁵ Minturn, ‘Dubuffet, Lévi-Strauss, and the Idea of Art Brut’.

⁵²⁶ Hubert Damisch, ‘Le véritable Robinson’, *Prospectus*, pp.18-19.

Fold over fold: Today the job of philosophy, which is that of art itself, comes down to suggesting another *arrangement of folds*, of imposing on it an ever newer and more antagonistic type, so that its domain will finally be filled with a thousand networks, meshes, creases, cracks, crevasses, furrows, hollows, *pleats* of every type. This is how we could imagine a philosophy that would be able to take advantage of the flexibility of the concepts and ideas it uses and of their spongy character—the very one that Dubuffet denounces—and which would take as its object the constitution, by means of the terms whose repetition constitutes its discourse, a certain number of constellations within which certain ones would mean something only through reference to the totality of the others—and *nature*, for example, only in relation to *culture*, but also only in relation to *art*; and philosophy: well, philosophy in its own turn in relation to *art*, and *nature*, and *culture*—all the work of the mind in need of reflection aimed at measuring, by means of a series of fictions and variations, the specific resistance of each of these concepts, its necessity, its elasticity, and its capacity of retention, in order to test the resources of their oppositions and combinations, in order to multiply the shared boundaries and lines of communication among them. What about *art*, or *philosophy*, if the recognized extension of *culture* tends to swell and to block the whole horizon of the concept? What about philosophy, or culture, or even mind, if what's left to art shrinks to the point of taking up only a barely visible margin on the frontiers of thought? And what other terms—*work*, *history*... —do we need to introduce into such an arrangement, or to subtract from it, to guarantee its balance, to stabilize it—or overthrow it?⁵²⁷

⁵²⁷ Damisch, 'Robinsonnades II: The Real Robinson', p.37.

Damisch describes a folding horizon of thought where art, culture, nature and philosophy co-exist and co-extend as receptive forms. In this space, art and philosophy meld into one another, with all systemic discretion lost. This primordial space must make use of the elastic concept, which is the “zero degree” through which its networked relations of folding folds are realised. Damisch speaks of the resistance of ‘art’, ‘nature’ and ‘culture’ to one another. The elastic concept is an oblique revelation with a diagonal shape, the beauty of which extends from its primordial and frictionless quality, and its ability to traverse these defined zones of thought. The elastic concept hence breaks through or ruptures the rigid categories that have so far limited art, culture and nature to their historical structures of expression.

While this passage celebrates the elasticity of the concept for its anti-Hegelian qualities, the prior passages reveal at what cost an elastic concept is inserted into a rigid structure of thought. The categories of art, culture and nature ‘take advantage’ of the elastic concept, the flexibility of which ruptures through these proximal zones, folding one into the other. While Damisch offers this theory as a concept about concepts, this depiction of how structured thought relates to itself through elastic or plastic forms revisits the racialised modes of perception that sustain economic structures of exploitation. I think here of the work of Tadiar, who writes that ‘surplus human life can serve not only as flexible labor’ but that doing so these lives serve as ‘*risk-absorbing collateral*’.⁵²⁸ Damisch’s elastic concepts are the risk-absorbing collateral that allow for the experimental rupture of art, culture and nature into one another.

⁵²⁸ Tadiar, ‘Life-Times of Disposability with Global Neoliberalism’ (p.27).

The passage, then, enriches existing understanding of how expropriation is realised through concepts. Firstly, the passage opens questions of legitimacy, reflected upon elsewhere by Angela Davis when writing about black American slave women and their delegitimised socio-cultural surroundings.⁵²⁹ Where Damisch writes of the elastic concept as ‘freed from the socialized forms’, or ‘outside the usual circuits of cultural production and consumption’, this highlights the slippage between that which is unable to flourish because it has been delegitimised and that which is liberated from social law.⁵³⁰ In Davis’ work, she is speaking about law in terms of validity, rights and justice. However, the laws of representation are equally salient. Damisch prefaces the elastic concept with his frustration that the Hegelian idea confines art to an object of ‘mere representation’.⁵³¹ The elastic concept that is “freed” from legitimacy is hence also liberated from the regular circuits of representation. This is of course how Damisch thinks of clouds, as the “zero degree” of Western painting and the perspectival construct. And here too, Damisch’s work is revealing when it comes to the critique of deligitimacy and dehumanization. Damisch writes that clouds possess ‘no reality apart from that assigned to it by the representation’.⁵³² In this it becomes clear that whatever is liberated from the circuits of representation is not freed into elasticity, but rather in that state of flux, depends even more deeply on the legitimised concept and on valorised representation for its assignment of sense.

⁵²⁹ Angela Davis, ‘Reflections on the Black Woman’s Role in the Community of Slaves’, *The Massachusetts Review*, 13.1/2, Woman: An Issue (Winter–Spring 1972), 81–100 (p.85).

⁵³⁰ Damisch, ‘Robinsonnades II: The Real Robinson’ (p.38).

⁵³¹ Damisch, ‘Robinsonnades II: The Real Robinson’ (p.35).

⁵³² Damisch, ‘Our Sheet’s White Care’, p.184.

I quote the above passage at length so as to highlight the striking parallels between this thousand-way folding space and what became of the geophilosophical spatialisation of Deleuze and Guattari's co-authored anti-capitalist works of the 1970s and early 1980s.⁵³³ Damisch's vision for thought much aligns with the concept of space that came to articulate Deleuze and Guattari's radical agenda for philosophy. This brings new significance to the above analysis of the fantasy of freedom and the realities of delegitimisation and dependency encapsulated in the elastic concept. It would be overstated to claim the centrality of any one citation or one concept to the work of Deleuze and Guattari, who engaged so variously and often unsystematically with sources and materials. However, it seems appropriate to ask to what extent Damisch's elastic concept went further than the footnote in *What is Philosophy?*, running into the articulation of their anti-capitalist philosophical agenda. Siting the elastic concept within anti-capitalist philosophy could forge a connection between this theoretical discourse and the aforementioned contemporaneous economic experiments with elasticity.⁵³⁴ This would bring clarity to the elastic concept in its contemporary iteration, suggesting that a settler colonial dynamic of dehumanisation undergirds what might otherwise appear as a philosophy of flexibility, or as the innocent celebration of "fleeting" forms such as clouds.

⁵³³ Gilles Deleuze and Félix Guattari, *Anti-Œdipus: Capitalism and Schizophrenia*, vol. 1, trans. by Robert Hurley, Mark Seem and Helen R. Lane (London: Continuum, 2004 [1972]); *A Thousand Plateaus: Capitalism and Schizophrenia*, vol. 2, trans. by Brian Massumi (London: Continuum, 2004 [1980]).

⁵³⁴ Antunes, 'Toyotism', 'Freeze-dried flexibility' and 'The New Morphology'.

Consequently, I will presently turn to explore the constitutive role of elasticity in the anti-capitalist philosophical programme of Deleuze and Guattari's work. This might suggest that Damisch's elastic concept, conceived in the 1950s, had some role to play in their development of a rhizomatic philosophy. More than intervening into the work of Deleuze and Guattari, this will facilitate a more integrated discussion of the nineteenth-century materials analysed in the latter half of this chapter. Deleuze and Guattari specifically deploy elasticity as part of a radical move to destabilise given structures, just as Damisch deploys the elastic concept as a primitive form. In the latter half of this chapter I am going to interrogate these ideas, through the nineteenth-century conception of clouds as agentic forms and of the artist as a free agent. John Ruskin (1819–1900) afforded artists a state of elasticity, conceiving of artists as beyond the political economy of quotidian work. Ruskin uses Turner to try to collate labour elasticity and ecological elasticity, as if Turner's artistic agency is indicative of his closeness to the elasticity of ecological clouds. This concept of clouds venerates the idea of freedom from representation, even while that which is "liberated" depends more deeply for legitimacy on existing circuits of meaning.

Primitivism and Clouds as the "Zero Degree"

Part Two: The Tearing of the *Urstaat*

If sympathetic to the writings of Deleuze and Guattari, as are critics Robert Bernet and Todd May, then it would appear that elasticity sits constructively within their anti-capitalist agenda.⁵³⁵ For Deleuze and Guattari, ‘elasticity of the concept’ is a prerequisite of the plane, void or horizon of thought, a central concept within Deleuze and Guattari’s collaborations, especially to their two-volume work *Capitalisme et Schizophrénie*, published as *L’Anti-Oedipe* (1972) and *Mille plateaux* (1980). In this second volume of *Capitalism and Schizophrenia*, various forms or figures of thought seem to offer different places to identify how Deleuze and Guattari propose or formalise the rupture of the *Urstaat*, Capital or State-form.⁵³⁶ The ‘State-form’ is the ‘crystallization’ of capital; capitalism is the ‘forming’ procedure of crystallisation.⁵³⁷ Or, as they elsewhere write, ‘Capitalism forms[...];’⁵³⁸ and this forming is the ‘*organizing conjunctions of decoded flows*’.⁵³⁹ Moreover, since ‘*Forms and substances, codes and milieus* are not really distinct. They are the abstract components of every articulation’, capitalism is not just the forming procedure, or the crystallization process of the State-

⁵³⁵ Rudolf Bernet, ‘The Limits of Conceptual Thinking’, *The Journal of Speculative Philosophy*, 28.3, Special Issue with the Society for Existentialist Philosophy and Phenomenology (2014), 219–241 (p.232); Todd G. May, ‘The Politics of Life in the Thought of Gilles Deleuze’, *SubStance*, 20.3, 66, Special Issue: Deleuze & Guattari (1991) 22–45.

⁵³⁶ Kenneth Surin, ‘The Undecidable and the Fugitive: “Mille-Plateaux” and the State-Form’, *SubStance*, 20.3, 66, Special Issue: Deleuze & Guattari (1991), 102–113.

⁵³⁷ Deleuze and Guattari, ‘7000 B.C.: Apparatuses of Capture’, *A Thousand Plateaus: Capitalism and Schizophrenia*, vol. 2, pp.468–522, p.488.

⁵³⁸ Deleuze and Guattari, ‘7000 B.C.: Apparatuses of Capture’, *Capitalism and Schizophrenia*, vol. 2, p.500.

⁵³⁹ Deleuze and Guattari, ‘7000 B.C.: Apparatuses of Capture’, *Capitalism and Schizophrenia*, vol. 2, p.474.

form, but the forming procedure of form in and of itself.⁵⁴⁰ On the face of it, then, these structuring processes of form articulate whatever might be antithetical to fluidity, elasticity, mobility, movement or life. They are procedures that ultimately crystallize non-elastic orders of form.

Interpellated into these non-elastic orders of form, '[we] are continually stratified', into the three 'great strata' of 'the organism, significance, and subjectification'.⁵⁴¹ Oppressive systems thus freeze the fluidity of life and thought, seizing elasticity into these three rigid forms.⁵⁴² It is helpful to look at Deleuze's *The Logic of Sense* [*Logique du Sense*] (1969) for an understanding of how we are interpellated into these processes of forming. Here Deleuze associates the process of 'forming' that in *Mille plateau* underlies how capitalism performs a crystallization of the subject and the State, with 'metaphysics and transcendental philosophy', which impose an alternative on us: 'either an undifferentiated ground, a groundlessness, formless nonbeing, or an abyss without differences and without properties, or a supremely individuated Being and an intensely personalized Form'.⁵⁴³ Metaphysics is a process of forming because it personalizes and individuates form.

⁵⁴⁰ Deleuze and Guattari, 'Conclusion: Concrete Rules and Abstract Machines', *Capitalism and Schizophrenia*, vol. 2, pp.552–566, p.553.

⁵⁴¹ Deleuze and Guattari, 'November 28, 1947: How Do You Make Yourself a Body Without Organs?', pp.165-184, *Capitalism and Schizophrenia*, vol. 2, p.176.

⁵⁴² Bernet, 'The Limits of Conceptual Thinking'. Cf. Martin Heidegger, *What Is Called Thinking?*, trans. by J. G. Gray (New York: Harper and Row, 1968).

⁵⁴³ Gilles Deleuze, 'Fifteenth Series of Singularities', *The Logic of Sense*, trans. by Mark Lester, ed. by Constantin V. Boundas (London: Continuum, 2004), pp.116–125, p.121.

My echo of Nietzsche's *Gay Science* (1882/8) is intentional.⁵⁴⁴ Noting how central the 'order/chaos' binary is to metaphysical thinking, as a process of crystallization, Deleuze and Guattari demonstrate a close critical attention to Nietzsche's later writings, where he formulates his most incisive critique of metaphysics. What Nietzsche sees in metaphysics, Deleuze and Guattari contend with as the procedure of capital. Capitalism articulates us into personalized forms. Capitalism thus proposes that without these forms, or the beings that it makes, we 'will have only chaos'.⁵⁴⁵ This influence of Nietzsche's work could be attributed to Deleuze's input. As François Dosse records, in the years preceding his work with Guattari Deleuze was at the university of Lyon finishing the doctoral thesis that would become *Difference and Repetition* (1968) and *Expressionism in Philosophy: Spinoza* (1968).⁵⁴⁶ In these works, Deleuze is working through reconfiguring what philosophical concepts can mean and how they can exist, on account of his sympathetic analysis of Nietzsche's critique of philosophical concepts as methods of crystallising subjectivity into given forms.⁵⁴⁷ In *Difference and Repetition*, 'the modern work of art', such as Mallarmé's *Book* or Joyce's *Finnegan's Wake*, indicates to philosophy a path leading to the

⁵⁴⁴ Friedrich Nietzsche, *The Gay Science, with a prelude in rhymes and an appendix of songs*, trans. by Walter Kauffman (New York: Vintage Books, 1974), Book III: '§109 *Let us beware*.—[...] The total character of the world, however, is in all eternity chaos—in the sense not of a lack of necessity but of a lack of order, arrangement, form, beauty, wisdom, and whatever other names there are for aesthetic anthropomorphisms'. p.168.

⁵⁴⁵ Deleuze, 'Fifteenth Series of Singularities', p.121.

⁵⁴⁶ François Dosse, 'The Founding Rupture: May 1968', *Gilles Deleuze & Félix Guattari: Intersecting Lives*, trans. by Deborah Glassman European Perspectives: A Series in Social Thought and Cultural Criticism, ed. by Lawrence D. Kritzman (New York: Columbia University Press, 2010), pp.170–182.

⁵⁴⁷ Gilles Deleuze, *Nietzsche and Philosophy*, trans. by Hugh Tomlinson (London: Continuum, 2006).

abandonment of representation'.⁵⁴⁸ This abandonment decries Cartesian doubt, Nietzsche's neurasthenic of creativity.

Deleuze and Guattari were jointly motivated in discovering methods of bypassing the order/chaos binaries that ground the imposition of psychosocial orders of the organism. This applies equally to signification or subjectification. In *A Thousand Plateaus*, the 'Body without Organs' intervenes into the given structuration of the 'organism', as 'the BwO is that glacial reality[...] It swings[...] it submits[...] it unfurls, and opens to experimentation[...] the BwO is always swinging between the surfaces that stratify it and the plane that sets it free'.⁵⁴⁹ The BwO disassembles the organism, taking with it the biopolitic of personalized subjectification and the crystallization of State-form. This dissembling function of the BwO makes it a figure that partakes in (performing) what Deleuze and Guattari describe as:

[...] tearing the conscious away from subject in order to make it a means of exploration, tearing the unconscious away from significance and interpretation in order to make it a veritable production.⁵⁵⁰

This action of 'tearing' interrupts the procedure of the BwO, as a swinging, unfurling, opening or glacial reality. Tearing makes space for the nomad or

⁵⁴⁸ Gilles Deleuze, 'Difference in Itself', *Difference and Repetition*, trans. by Paul Patton (London: Continuum, 2004), pp.36–89, p.82.

⁵⁴⁹ Deleuze and Guattari, 'November 28, 1947: How Do You Make Yourself a Body Without Organs?', *Capitalism and Schizophrenia*, vol. 2, pp.176–8.

⁵⁵⁰ Deleuze and Guattari, 'November 28, 1947: How Do You Make Yourself a Body Without Organs?', *Capitalism and Schizophrenia*, vol. 2, p.177.

the plane of consistency, as roughly synonymous non-conditioned tears or rips in Deleuze and Guattari's thought.

Deleuze and Guattari thus jointly recuperate Nietzsche's philosophical contention with metaphysics as a procedure of forming. They do so through their shared question of how to intervene, both academically and as activists, into the biopolitical structures of capital. Building on Nietzsche's philosophy, they to some extent conflate capital with Western metaphysics, jointly introducing 'tearing' as a psychological rupture of the conscious from the subject or the unconscious from significance. To this end, tearing not only articulates the radicalism of Deleuze's philosophy but also the philosophy of Guattari's radicalism, in his psychoanalytic practise at experimental psychiatric clinic La Borde, his work as a founding member of the Left Opposition Group, the March 22 Movement, and a revolutionary militant in the April–May 1968 social revolts across France.⁵⁵¹

Appraising these non-conditioned possibilities of thought, Deleuze and Guattari oppose tearing to '[organization] and development', or to 'form and substance: at once the development of form and the formation of substance or a subject'.⁵⁵² The BwO, the nomad and the plane of consistency thus appear diametrically opposed to the 'forming' of substance as a metaphysical procedure of sense, capital and subjectivity. As Guattari writes, 'Capitalism' is a 'method of Capital', 'semiotization' or 'indexing

⁵⁵¹ Dosse, 'The Founding Rupture: May 1968', pp.170–182.

⁵⁵² Deleuze and Guattari, 'Conclusion: Concrete Rules and Abstract Machines', *A Thousand Plateaus*, pp.552–566, p.558.

system'.⁵⁵³ The BwO and the plane of consistency are opposed to significance and signification, or what Deleuze and Guattari term 'the regime of signs of the State: overcoding, or the Signifier' as the inscription of meaning in form: 'the abstract components of articulation'.⁵⁵⁴

Deleuze's own writing, in the *Logic of Sense*, and Guattari's thinking on the semantics of capital, are additionally useful in this vein. To reiterate, for Deleuze metaphysics and transcendental philosophy imprison singularities in intensely individuated beings because these are diametrically opposed through the strict binary of form and formlessness.⁵⁵⁵ Deleuze and Guattari do not opt into this binary by presenting the 'organism' and 'BwO' as opposites; nor do they present '*the plan(e) of capital*' and the 'plane of consistency' as 'alternatives'.⁵⁵⁶ The non-conditioned form that they appraise as a procedure of 'tearing' is instead a procedure of forming; insofar as rigid forms are procedures of forming that the formless pass through. This is equally why, for Guattari, 'a-signifying points of rupture' are equally complicit in the semantics of capital as a mode of articulating the world, as are sense- and meaning-making processes.⁵⁵⁷ Attributing the 'a-signifying rupture' to the forming of capital may appear to contradict the appraisal of the arguably 'a-signifying rupture' of the BwO or the plane of consistency. Yet simply stated, when Deleuze and Guattari speak about

⁵⁵³ Félix Guattari, 'Capitalist Systems, Structures and Processes', *Soft Subversions: Texts and Interviews, 1977–1985*, Semiotext(e) Foreign Agents Series (London: MIT Press, 2007), pp.265–277, p.265.

⁵⁵⁴ Deleuze and Guattari, '7000 B.C.: Apparatuses of Capture', p.472.

⁵⁵⁵ Deleuze, 'Fifteenth Series of Singularities', p.121.

⁵⁵⁶ Deleuze and Guattari, '7000 B.C.: Apparatuses of Capture': '*the plan(e) of capital*'. p.521.

⁵⁵⁷ Félix Guattari, *The Three Ecologies*, trans. by Ian Pindar and Paul Sutton (London: Continuum, 2008), pp.15–45, p.37.

‘tearing’ this rupture is totally different to the rupture of a-signification that is entailed in the semantics or the ‘semiotic chains’ of capital.⁵⁵⁸ The tearing they are attempting to articulate counteracts forming from within. It is a non-conditioned tear—this is why it is a performed action of ‘tearing’ and not the already-performed, already-supposed event as ‘rent’ or irremediable fissure in Derrida.⁵⁵⁹ The idea of tearing with which Deleuze and Guattari are grappling is a necessarily non-conditioned event of forming.

In *What is Philosophy?*, Deleuze and Guattari express the philosophical implications of this anti-capitalist vision of ‘tearing’, as a non-conditioned movement in thought. In this book they describe philosophy as an ‘art of forming, inventing, and fabricating concepts’.⁵⁶⁰ This once more revisits Nietzsche, and once more maps the co-ordinates of philosophy through their insights into capitalism. Yet in this text, the ‘elastic concept’ comes to serve as the BwO and the plane of consistency did so in the earlier works. In a passage that echoes Damisch’s 1976 preface, Deleuze and Guattari write:

Le plan de la philosophie est pré-philosophique tant qu’on le considère en lui-même indépendamment des concepts qui viennent l’occuper, mais la non-philosophie se trouve là où le plan affronte le chaos. *La philosophie a besoin d’une compréhension non-philosophique, comme l’art a besoin de non-art, et la science de non-science.* [...] Pensée non-pensante qui gît dans

⁵⁵⁸ Guattari, *The Three Ecologies*, p.37.

⁵⁵⁹ Jacques Derrida, ‘Before the Law’, *Acts of Literature*, ed. by Derek Attridge (London: Routledge, 1992), pp.181–220: ‘Event without event[...] this pure and purely presumed event nevertheless marks an invisible rent in history’ .’ p.521.

⁵⁶⁰ Deleuze and Guattari, ‘Introduction: The Question Then . . .’. *What is Philosophy?*, pp.1–14, p.2.

les trois, comme le concept non-conceptuel de Klee ou le silence intérieur de Kandinsky.⁵⁶¹

For Deleuze and Guattari, elastic concepts occupy a plane that is the “zero degree”, or ground, of philosophy. This ground is pre-philosophical, because it exists independently of those concepts. Hence, what is at stake here is not nonconceptuality or non-thought *per se*, but nonconceptuality in its instrumentalised function, where it is used to execute a structure of exclusion through the production of exploitable human capital. What is at stake is the manner in which the emancipatory associations of elasticity can be instrumentalised in the production of perpetual precarity. This is why the philosophical appraisal of forming elastic concepts is a highly politicised project, even when it is asked under the guise of a question about philosophy. The philosophical project of forming elastic concepts takes place within the given metaphysical order of the concept (hence, it remains necessary to retain the fixities of the concept through the intervention of elasticity). The ‘elastic concept’, cited to Damisch yet hardly reducible to his thinking at the time, could be framed as an attempt to reclaim the ‘concept’ from Western philosophical constructs of metaphysics and transcendental philosophy. As Guattari writes, ‘formulas organizing social life, work and culture[...] can be made to bend’.⁵⁶² But in order to serve an anti-capitalist agenda, the elastic concept must be de-politicised and unrooted from its historical operation as a mechanism of capital, State-form or the *Urstaat*. If Deleuze and Guattari’s work has become foremost in how

⁵⁶¹ Deleuze and Guattari, ‘Conclusion: Du chaos au cerveau’, *Qu’est-ce que la philosophie?*, pp.189–206, pp.205–6.

⁵⁶² Félix Guattari, ‘So What’, *Soft Subversions*, pp.64–80, p.80.

neoliberalism is articulated, then this involves the re-organisation of the elastic concept through its racist history, and in that, of anti-capitalism through capitalist modes of production and the implied usurpation and expropriation.⁵⁶³ The elastic concept, key to a radical anti-capitalist project, has been re-rooted into the colonial history that gives it meaning.

So far I have established the racist ontology and the colonial history of Damisch's 'elastic concept', and expanded the implications of the elastic concept through Deleuze and Guattari. The elastic concept claims to be a philosophical invention that tears capitalist modes of production, specifically in the production of the subject. The following section of this chapter analyses how ideas of elasticity became associated with clouds through the nineteenth century, critiquing this association on similar grounds. I will turn to this period to continue the interrogation of how elasticity condenses emerging concepts of cloud-formation and subject-formation. I will argue that clouds became a physical embodiment of ideas of liberation and self-determination, key to the model of agency at play in the art theory of Ruskin. I will then look to nineteenth-century classification system for clouds, developed by the amateur meteorologist, Luke Howard (1772-1864). I will argue that nineteenth-century systems of classification structured clouds through social norms, and iconographically linked clouds with the elasticity of male, artistic freedom, and the mobility and flexibility of artistic labour.

⁵⁶³ Boltanski and Chiapello, 'Management Discourse in the 1990s', pp.57–102.

The Creative Self-Discipline of Elasticity

Ruskin's ideas about freedom and discipline are tied to his ideas about artists and the arts. In Ruskin's *The Political Economy of Art* (1857), later developed into *A Joy For Ever* (1880), the writer takes up the question of disciplinary orders of the state, in the specific context of how labour organises socialised individuals:

The value of the man consists precisely [in the fact of your being able to put a bridle on him.] If you can bridle him, or which the better, if he can bridle himself, he will be a valuable creature directly.⁵⁶⁴

For Ruskin, the best system for constraining a society is a system of self-discipline and self-organised labour. This theory of a political economy is founded upon the belief that 'idleness does not cease to be ruinous, because it is extensive, nor labour to be productive because it is universal'.⁵⁶⁵ Unlike 'productive' labour, the artist's labour is creative—it is the business of 'special genius' of the 'art-intellect'—and so an alternative work organisation must protect the artist from usual economic structures.⁵⁶⁶ To allow his labour to be structured through the political economy would

⁵⁶⁴ John Ruskin, *The Political Economy of Art* (London: Cassell and Co., 1909), p.27.

⁵⁶⁵ Ruskin, *The Political Economy of Art*, p.19.

⁵⁶⁶ Ruskin, *The Political Economy of Art*, p.29.

compromise the creativity of that labour. It would interfere with the ‘freedom of the patron or artist’.⁵⁶⁷ Ruskin thus attempts to negotiate terms for protecting (male) artists from the political economy.

Ruskin’s five volume *Modern Painters* is covertly concerned with the creative labour of the artist and with questions of how this creative labour presents itself in the forms of art. In the first volume of 1843, Ruskin prefaces the work as a response to the ‘shallow and false criticism’ of the artist J.M.W. Turner (1775-1851) in reviews of Royal Academy exhibitions; his work will revive a new appreciation for ‘great living Masters’ such as Turner.⁵⁶⁸ This appreciation will be argued on largely formalist terms, as Ruskin believes that ‘Form is form, *bonâ fide* and actual[...] not an imitation or resemblance of form, but real form’.⁵⁶⁹ Ruskin wants to develop in his readers, an appreciation for the forms that are beyond the ‘technicalities, difficulties, and particular ends’ of convention.⁵⁷⁰ In terms of creative labour, this is intended to protect artists like Turner from economic devaluation, protecting the logic of creative labour from the logic of the economy, and thus ensuring true forms and truly valuable forms of creative output. To this end, what Ruskin calls ‘art-intellect’ and I am calling ‘creative labour’, we might more accurately term anti-capitalist labour. For Ruskin, art is an anti-capitalist form of work.⁵⁷¹

⁵⁶⁷ Ruskin, *The Political Economy of Art*, p.26.

⁵⁶⁸ John Ruskin, ‘Preface’, *Modern Painters*, vol. 1 (London: Smith, Elder and Co, 1843), pp.vii–xii.

⁵⁶⁹ John Ruskin, ‘Chapter IV: Of Ideas of Imitation’, *Modern Painters*, vol. 1, pp.20–24, p.22.

⁵⁷⁰ John Ruskin, ‘Chapter II: Definitions of the Greatness in Art’, *Modern Painters*, vol. 1, pp.9–14, p.9.

⁵⁷¹ Here I am conflating Ruskin’s position on art with his reading of what art should be. For a supporting argument see David Craven, ‘Ruskin vs.

Accordingly, Ruskin's *Modern Painters* explores the idea of the 'truth of art' as a theorem that relates to his thinking on the creative labour of the artist. In the 1873 edition of Volume Three (1856) of *Modern Painters*, he writes that the '*naturalist ideal*' of art follows the 'rule' of the 'real' of nature, such that the artist follows the arrangement of natural forms in the arrangement and invention of their work.⁵⁷² He goes on to state:

The great men never know how or why they do things. They have no rules; cannot comprehend the nature of rules; do not, usually, even know, in what they do, what is best or what is worst: to them it is all the same; something they cannot help saying or doing,—one piece of it as good as another, and none of it (it seems to *them*) worth much.⁵⁷³

The above exegesis can be positioned in dialogue with Ruskin's theories of the special labour of the artist. For Ruskin, art should have 'no rules' and should not be aware of its own content or direction. Rather, the anti-capitalism of the artist produces true artistic forms that are closer to the unruliness of nature (note the assertion of his own lawlessness using the '/,— /?' punctuation construction, as if his own writing is too creative to command into full sentences).

Whistler: The Case Against Capitalist Art', *Art Journal*, 37.2 (Winter 1977–1978), 139–143.

⁵⁷² John Ruskin, 'Chapter VII.—Of The True Ideal:—Secondly, Naturalist', *Modern Painters*, vol. 3 (London: Smith, Elder and Co., 1873), pp.81–96, pp.81–88.

⁵⁷³ Ruskin, 'Chapter VII.—Of The True Ideal:—Secondly, Naturalist', *Modern Painters*, vol. 3, p.88.

An artist who is ‘led to dwell’ on profit and wealth ‘gradually loses both his power of mind and his rectitude of purpose’.⁵⁷⁴ An artwork that has not been created by an artist liberated from the political economy will lack the ‘truth’ of form that goes beyond given conventions of aesthetic form and that operates outside the structures of the political economy. Ruskin’s repeal of Turner’s work in *Modern Painters* thus aimed to make the artist appear to diverge from convention and from the political economy of the state. More, the ‘wholesome truth’ of ‘invention formal’ accomplishes perfection through the conjunction of ‘sight and sincerity’, and thus ‘it is only the constant desire of and *submissiveness* to truth, which can measure its strange angles and mark its infinite aspects; and fit them and knit them into the strength of sacred invention [my emphasis]’.⁵⁷⁵ For Ruskin, art and creativity submit to what lies beyond theoretical understanding, beyond theory. It would be reductive to suggest art submits to nature, yet insofar as nature produces organically beautiful forms that cannot be reduced to economic modes of production, Ruskin roughly comes to align nature and art with non-economic creativity.

Volume Two (1843) of *Modern Painters* contains compatible concerns with how creative labour evades the economy, submitting art to the non-theoretical in nature. Ruskin writes, ‘the Theoretical faculty takes out of everything that which is beautiful, while the Imaginative faculty takes hold of the very imperfections which the Theoretical rejects’.⁵⁷⁶ The

⁵⁷⁴ Ruskin, *The Political Economy of Art*, p.135.

⁵⁷⁵ Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990).

⁵⁷⁶ John Ruskin, ‘Of Imagination Associative’, *Modern Painters*, vol. 2, part 3, 4th Edn. (London: George Allen, 1891), pp.147–162, p.46.

nonconceptual truth of art realizes itself through work that is not merely modelling a concept. Hence the strange paradoxical style of passages such as: ‘all art is, in some sort, realization; it may be the realization of obscurity and indefiniteness, but still it must differ from the mere *conception* of obscurity and indefiniteness’.⁵⁷⁷ For Ruskin, the artistic realization of obscurity differs from the need to conceptualise obscurity.

It is possible to position this resistance to conceptualisation against the backdrop of emerging nineteenth-century systems of information. In accordance with the extended critique of disciplinary regimes in Foucault, Ian Hacking has argued that the nineteenth-century technology of the printing press facilitated the reproduction of social statistical norms as a disciplinary system of social codification.⁵⁷⁸ These forming social norms effected labour arrangements, through organising the social into maximally capitalist structures. To this degree, capitalist development has been historically sited in information, as Alistair Black and Dan Schiller have highlighted.⁵⁷⁹ According with what Peter Burke has called ‘print capitalism’, the technology of the printing press was one of many facilitating devices in the implementation and concretisation of statistical structuring of humans into socialised beings, giving substance to how capital must predicate its abstract forms on social norms.⁵⁸⁰

⁵⁷⁷ John Ruskin, ‘Of Imagination Contemplative’, *Modern Painters*, vol. 2, part 3, 4th edn., p.134.

⁵⁷⁸ Hacking, *The Taming of Chance* (1990).

⁵⁷⁹ Alistair Black and Dan Schiller, ‘Systems of Information: The Long View’, *Library Trends*, 62.3 (Winter 2014), 628–662 (p.632).

⁵⁸⁰ Peter Burke, *A Social History of Knowledge: From Gutenberg to Diderot* (Cambridge: Polity Press, 2000).

Ruskin's work abounds with the tensions of numeration, as a system that reduces the individual to a norm and as a system that reduces art to its exchange value. In fact, his reactive ideas of truth and liberated labour are most explicitly theorised in relation to clouds. Volume One (1843) of *Modern Painters* contains 'Section III: Of Truth of Skies', a five-chapter meditation on both the true forms of the skies and the truest forms of painted skies in modern works of art (namely, those of Turner). Volume Five (1860), which followed many years later, demonstrated Ruskin's continued appraisal of clouds as encapsulating the truth of art. In Volume One, Ruskin gives a long meditation on the elastic capacities of upper-level clouds, as forms that are 'of great flexibility and unity at the same time, as if the clouds were tough, and would hold together however bent'.⁵⁸¹ These clouds are 'disciplined'.⁵⁸² They have 'a plan and system'; 'a relative and general system of government'.⁵⁸³ They abide by 'symmetrical discipline'.⁵⁸⁴ Counterpoised to these clouds, the feminine force of nature is aligned with 'the violence of the wind'.⁵⁸⁵ Every cloud follows the disciplinary violence of these feminized winds yet no cloud is subordinate entirely to the wind. Instead, the dichotomously male gendered clouds remain individual subjects created by divine forces 'appearing to have had distinct thought occupied in its conception, and distinct forces in its production'.⁵⁸⁶

⁵⁸¹ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.197.

⁵⁸² Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.199.

⁵⁸³ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.197.

⁵⁸⁴ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.197.

⁵⁸⁵ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.198.

⁵⁸⁶ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.199.

Upper level clouds are the primary forms that Ruskin describes as ‘elastic’, while lower forms break and tear and rupture with more precarity. On these grounds, Daniel Williams has suggested that Ruskin ranks the skies in order of the visible agency of form, or the capacity of form to perform with or against the wind; arguing that since upper-level clouds are more elastic, these clouds possess less agency and hence render the wind a covert force of control: a ‘passive and peripheral’-seeming violence.⁵⁸⁷ Ruskin venerates the overall elasticity of clouds as indicating self-discipline through displays of flexibility. What Williams makes clear, is the extent to which Ruskin’s thinking about clouds was led by a notion of “truth” tied to his theory of the male artist as “liberated” from the political economy.

In keeping with this interpretation, in Volume Five, Ruskin describes the forms of clouds in a manner that brings to mind his veneration of the ‘uncontrollable’ mysteries of the artist at work. He states that he will say nothing ‘dogmatic respecting clouds’, continuing:

I will assume nothing concerning [clouds], beyond the simple fact, that as a floating sediment forms in saturated liquid, vapour floats in and with the wind (as, if you throw any thick colouring-matter in a river, it floats with the stream), and that it is not blown before a denser volume of wind, as a fleece of wool would be.⁵⁸⁸

⁵⁸⁷ Daniel Williams, ‘Atmospheres of Liberty: Ruskin in the Clouds’, *English Literary History*, 82.1 (Spring 2015), 141–182 (p.145).

⁵⁸⁸ John Ruskin, ‘The Cloud-Balancings’, *Modern Painters*, vol. 5 (London: Smith, Elder and Co., 1873), p.112.

Ruskin's statement of open-mindedness correlates with his efforts to stand artists beyond the political economy of the state. As the passage from Volume Five continues, Ruskin instructs the reader to stand by a window with Samuel Rogers' *Poems* (1834), containing engravings from Turner's watercolours.⁵⁸⁹ Doing so, he emphasises the 'excessive sharpness of every edge' in the engravings, before emphatically imploring the reader to see these edges 'melting away', as the clouds 'melt back into the recesses of the sky', 'all its spaces melting and fluctuating'.⁵⁹⁰ Turning the reader to the window, he asks them to 'test [the engraving] by nature's own clouds, among which you will find forms and passages[...] apparently the actual originals of parts of this very drawing'.⁵⁹¹ He uses these directions to establish the symbiosis of the 'melting and fluctuating' forms in the engraving and the forms beyond the window. For Ruskin, the creative labour of the artist is inimitably bound to clouds, mirroring their fluctuating patterns. Hence, the type of agency Ruskin constructs for an artist is figured in his idea of clouds as elastic forms.

Rather than drawing his ideas about the truth of Turner's skies from the actual forms that clouds and storms take in his artwork, I would proffer that Ruskin formulated this opinion on the basis of Turner's working patterns. Ruskin's *Political Economy of Art* (1857) post-dates Turner's death and follows from the permission that Ruskin was granted by Ralph Nicholson Wornum (1812-1877), Keeper and Secretary of the National

⁵⁸⁹ Samuel Rogers and J.M.W. Turner, *Poems* (London: T. Cadell and E. Moxon, 1834).

⁵⁹⁰ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, p.202.

⁵⁹¹ Ruskin, 'Section III: Of Truth of Skies', *Modern Painters*, vol. 1, pp.202-3.

Gallery, to archive and arrange the Turner Bequest to National Gallery, including ‘seven tin boxes[...] upwards of nineteen thousand pieces of paper[...] About half, or rather more[...] in flat oblong pocket-books’.⁵⁹² Turner had died in 1851 and bequeathed the contents of his studio to the National Gallery in London. Ruskin arranged these from Autumn 1857 until May 1858.⁵⁹³ Ruskin notes, with romantic vehemence, the disarray of these pocket-books, which are ‘dropping to pieces at the back, tearing laterally whenever opened’.⁵⁹⁴ Carmen Casaliggi noted the importance of Ruskin’s time spent in this archive, as informing the centrality of clouds in his writings.⁵⁹⁵ I would additionally emphasise Ruskin’s quixotic relationship with the bequeathed archive, chasing his fictional Turner through the scattered, ripped and disregarded notebooks.

On inspection, these pocket-books paint a picture of Turner as a frantic and disorganised artist. He often ripped pages from books, opening sketchbooks to start in the middle or turning a sketchbook over to work back-to-front and upside-down. This disregard for structured labour—the spontaneity and lack of care for the pocket-books—must have confirmed Ruskin’s beliefs in the uncontrolled and creative modes of production inherent to art, as theorised in *The Political Economy of Art*, delivered as two lectures in June 1857 and developed into the work, *Unto This Last* in

⁵⁹² Ruskin, ‘Preface’, *Modern Painters*, vol. 5, pp.v–xii, p.vi.

⁵⁹³ Ruskin, ‘Preface’, *Modern Painters*, vol. 5, pp.v–xii.

⁵⁹⁴ Ruskin, ‘Preface’, *Modern Painters*, vol. 5, pp.v–xii, p.vi.

⁵⁹⁵ Carmen Casaliggi, ‘The Wide Significance of the “Art of Clouds in Ruskin’s *Modern Painters V*”’, *Rivista di Letterature moderne e comparate*, 62 (2009), 37–52.

The Cornhill Magazine (1860).⁵⁹⁶ In light of this overall confirmation of Ruskin's emerging ideas about labour, the economy, and the arts, I am interested to reflect upon how Ruskin would have read the sketchbook labelled '79. *Skies*'. (1818-19) and the posthumously named *Finance Sketchbook* (c.1807-1814).⁵⁹⁷

Turner did not always label his sketchbooks, however, he had added numbered labels to help differentiate a series of similarly designed sketchbooks from his time in Italy in 1819-20.⁵⁹⁸ Imagine Ruskin's joy on discovering the sketchbook Turner labelled '79.*Skies*'.⁵⁹⁹ This sketchbook is dedicated nearly entirely to watercolour studies of storming clouds.⁶⁰⁰ As Ian Warrell has noted, the sketchbook contains a study of the London home of Walter Ramsden Hawksworth Fawkes (1769-1825), a major patron with whom Turner was dealing from at least 1807.⁶⁰¹ Turner was financially invested in Fawkes. Not only did Fawkes owe Turner a substantial amount of money for over forty watercolours he had painted for the patron, but the

⁵⁹⁶ Ruskin, *The Political Economy of Art*; John Ruskin, 'Unto This Last'—I. The Roots of Honour, pp.155–166; II.—The Veins of Wealth, pp.278–286; III.—Qui Judicatis Terram, pp.407–418; IV.—Ad Valorem, pp.453–464 in *The Cornhill Magazine*, vol. 2, July to December (London: Smith, Elder and Co., 1860).

⁵⁹⁷ Both sources are available upon supervised request in the Prints and Drawings Room at the Tate Britain.

⁵⁹⁸ Ian Warrell, 'Materials for the Exercise of Genius': Turner's Sketchbooks, *Turner's Sketchbooks* (London: Tate Publishing, 2014), pp.7–17, p.15.

⁵⁹⁹ A. J. Finberg, *A Complete Inventory of the Drawings of The Turner Bequest*, vol. 1 (London: Darling & Son, Ltd., 1909), p.451, under the entry CLVIII, Schedule No. 159: 'Sketch book bound in parchment./ Turner's label on back, "79. *Skies*."'

⁶⁰⁰ Turner worked in reverse of the sketchbook as now foliated, making two pencil sketches of sheep washing, 4th June, and a two pencil sketches of the skyline of London, Salt Hill.

⁶⁰¹ Ian Warrell, '1810–1819', *Turner's Sketchbooks* (London: Tate Publishing, 2014), pp.78–113, p.100.

sketch from *79.Skies*. is contemporaneous with a popular showcase of Turner's work in Fawkes's house. Upon inspection, the watercolour studies of *79.Skies*. demonstrate a focussed attention on visible form- and colour-chronology of idealised natural storms and clouds. In this respect, *79.Skies*. adheres to Ruskin's theory of 'naturalist ideals' in art, as the formalist conflation of creative labour, creative form and natural form.

Yet the demise of Ruskin's veneration of Turner has been historically associated with the disillusionment that the writer encountered upon his time spent ordering these sketchbooks and tin boxes in 1857-8, specifically upon discovering nudes amongst the collection.⁶⁰² Turner's biographer George Walter Thornberry (1828-1876) in his 1861 biography, made public a letter from Ruskin to Wornum corroborating rumours that they had colluded in 1858 to set fire to most of the nude 'erotica' in the Bequest; and Ruskin had since been publically received as a puritanical censorer of art, a reputation that was not helped by his dismissal of James McNeill Whistler (1834-1903) in the *Fors Clavigera* of 1877.⁶⁰³ Any material that suggested Turner's art was driven by the arousal of form over geometric form, by desire rather than desire-for-truth, was thus antithetical to Ruskin's idea of creative labour. For Ruskin, sex was beyond the theoretical beyond—too unruly even for the uncontrolled genius of the artist.

In this process of censorship, I am surprised Ruskin left the *Finance Sketchbook* intact. For one, it contains 'erotica', readily over-interpreted in

⁶⁰² Ian Warrell, '1810–1819', p.100.

⁶⁰³ See Ian Warrell, 'Exploring the 'dark side': Ruskin and the Problem of Turner's Erotica', *The British Art Journal* 4.1 (Spring 2003) 5–14. See also John Gage, *Turner's Secret Sketchbooks* (London: Tate Publishing, 2012).

the *British Art Journal* as a ‘couple having sexual intercourse’.⁶⁰⁴ This reading is not at all as obvious as implied, whilst the insinuation that this is a ‘couple’ co-opts a knotted confusion of six muscular limbs into the neat suggestion of a committed relationship. It is the fact of the impossibility of reading the image with accuracy, because of the jumble of limbs and the flurried pencil markings around the penis, that make it a counterpoint to Ruskin’s truth of art. Moreover, the drawing appears in a finance ledger, evidencing an economically driven artist who ordered his labour through the cost of materials and the sale of paintings.

The *Finances Sketchbook* extends across months and months of creative labour, and was clearly a revered object as it is made from expensive ‘velvet’ patent notepaper with a soft surface designed for use with a stylus not a pencil. As Matthew Imms has suggested, echoing John Gage, the sketchbook has an integral pocket inside the cover containing: a London coaching inn receipt, with a delivery note on the reverse; two pre-printed Bank of England slips with manuscript additions; and a folded sheet of accounts, containing reference to *Liber Studiorum*.⁶⁰⁵ Turner kept stocks with the stock-broker William Marsh on Sweetey’s Alley in London and would cash in these stocks when he needed money.⁶⁰⁶ He had begun

⁶⁰⁴ [n.a.], ‘A Checklist of Erotic Sketches in the Turner Bequest’, *British Art Journal* 4.1 (Spring 2003) 15–46.

⁶⁰⁵ Matthew Imms, ‘Finance Sketchbook c.1807–14’, sketchbook, September 2013, in David Blayney Brown (ed.), *J.M.W. Turner: Sketchbooks, Drawings and Watercolours*, Tate Research Publication, September 2014, available online <https://www.tate.org.uk/art/research-publications/jmw-turner/finance-sketchbook-r1147757> [accessed 07 June 2016]. Cf. John Gage, *JMW Turner: A Wonderful Range of Mind* (New Haven: Yale University Press, 1987), p.171, p.254, n.35.

⁶⁰⁶ A. J. Finberg, *The Life of JMW Turner, RA* (Oxford: Clarendon Press, 1961), p.170; Anthony Bailey, *Standing in the Sun: A Life of JMW Turner*

accumulating stocks of Government Funds in the late 1790s, and notes these transactions in the *Finance Sketchbook* using the abbreviations ‘C’ or ‘Consol’ for Consolidated stocks, ‘R’ for Reduced stocks, and ‘N’ for Navy stocks.⁶⁰⁷ There are also details of economic exchanges with patrons, such as the name ‘Fawkes’, in a note that Imms transcribes as:

2129 . 19.10 Bt Fawkes 304 19 1
 [?] 2
 2334 . 6 . 11 Bt Sir John 204 12
 2335 2 2 Ld Eg 600
 2935 2 2 70 Fawkes^[608] note 20 Feby
 3005 9 2

The various stock-keeping systems of the *Finances Sketchbook* are punctuated with pencil sketches of clouds, and a watercolour study of the sky. Looking at this otherwise, flipping through the sketchbooks and the Finberg catalogue reveals that his entire preparatory practice of studying clouds was punctuated with stock-taking and financial concerns.

The labour of Turner’s life and his creative practice are co-dependently encoded through a practice of keeping stock of money and preparing paintings of clouds. Indeed, in the *Swans (or ‘South Wales’)*

(New York: Harper Collins, 1998), p.108; James Hamilton, *Turner: A Life* (London: Hodder and Stoughton, 1997), p.186; Cecilia Powell, *Turner* (Andover: Pitkin Guide, 2003), p.107.

⁶⁰⁷ Imms, ‘Finance Sketchbook c.1807–14’.

⁶⁰⁸ As Finberg lists, Fawkes not only features as a subject of numerous calculations, scattered across seven years of notebooks and preparatory sketches in the bequest, he also appears as a subject in Turner’s *Grouse Shooting on Beamsley Beacon* (1816). In Finberg’s catalogue, see ‘Farnley Collection (F.H.Fawkes, Esp.)’: pp.154, 201, 202, 205, 208, 224, 263, 266, 270, 360, 361, 377, 381, 383, 399, 400, 407, 433–438, 561, 600, 643, 645; ‘“Farnley”’: pp.266, 270, 381; ‘Fawkes, Hawksworth’: p.1156; ‘Fawkes, Mr. Walter’: 196, 205, 224, 227, 228, 266, 270, 287, 337, 338, 360, 433, 435, 436, 438, 444, 445, 477, 600, 1149; ‘Fawkes “Pedigree,” Mr. Walter’: p.381. A. J. Finberg, *A Complete Inventory of the Drawings of The Turner Bequest*, vol. 1, p.1265.

Sketchbook (c.1798-9), I have noted a similar coding system to the one used for Turner's stocks being used by the artist to encrypt a sketch of a storming sky of clouds. Turner places an 'R' on top of a cloud that is in front of the sun, with shafts of light underneath marked with the letter 'B'.⁶⁰⁹ This frees the creative labour of clouds from any puritanical proposition of their status as uncontrolled, non-financial forms of creativity. Turner's studies of clouds are not signs of his anti-capitalist 'art-intellect' or 'special genius'. They are signs of the cultural attentiveness that allowed him to sustain at least a portion of his livelihood on artist's wages.⁶¹⁰ On the terms that Ruskin sets out for art, then, Turner's financialised clouds embarrass his status as a nationally celebrated artist, even to this day.⁶¹¹ Turner's studies of clouds are materially bound to the economic structures of his work, as signs that he knew what would sell and what was relatively cheap to study.

This problematisation of the creative labour of painting clouds is equally identifiable in the cloud studies of John Constable (1776-1837). Constable is known to have owned a copy of Thomas Forester's *Researches about Atmospheric Phenomena* (1812), containing the emerging scientific classification of clouds. He carried Forester's *Researches* with him to Hampstead Heath when he went 'skying', and annotated the classification.

⁶⁰⁹ J.M.W. Turner, *Swans (or 'South Wales') Sketchbook* (c.1798-9), p.116.

⁶¹⁰ John Gage notes that Turner made more from investments than his art. See Gage, *JMW Turner*, p.171, p.254 n.35.

⁶¹¹ It astounds me that existence of the *Finance Sketchbook* is omitted from the narrative told of Turner by Tate Publishing, a division of Tate Enterprise Ltd., through the contents of Ian Warrel's *Turner's Sketchbooks* (2014), where they publish reams of coloured images of clouds and skies.

⁶¹² This practice of studying clouds demonstrates an insight into the economic value of abiding by emerging abstract structures of the skies, as a new abstract ideal of art. Going ‘skying’ was relatively cheap as an artistic practice. Unlike still life studies carried out by academicians, a sky of subjects was freely available to sit for the artist hour upon hour, day after day. But in order to develop as an artist, Constable had to submit to the forms and formation processes of the skies as described and valued in the emerging formalist discourse of the sciences. On the reverse of many studies, he notes the time, day and direction of the wind.⁶¹³ The more and more various studies of clouds he could accumulate, the more his work would accord with the structuring of the skies, and the more his art would be valued and sold.

In a lesser-known example, the artist Thomas Kerrich (1784-1828) would leave his house in the middle of the night to study the halo effects of moonlight refracting through high-altitude clouds. Like Constable’s notes on the back of his cloud studies, Kerrich annotates each sketch with the time and date of his meteorological observations, echoing the method of meteorological journaling found in nineteenth-century magazines and popular journals.⁶¹⁴ These artists were not just influenced by the advancing science of meteorology; they *advanced* the advancing science of meteorology by structuring their creative labour like a scientific practice.

⁶¹² For an account of Constable’s attention to the formation processes of clouds see John E. Thornes, ‘Constable’s Clouds’, *The Burlington Magazine* 121.920 (November 1979) 697–699; 701–704.

⁶¹³ John E. Thornes, ‘The Weather Dating of John Constable’s Cloud Studies’, *Weather*, 34 (1979), 308–15.

⁶¹⁴ See the extensive collection of newly catalogued works by Thomas Kerrich in the Tate archive.

Meteorology as a system of thinking about the skies thus facilitated or urged artists to capitalise upon cloud forms. Even if Constable was ultimately more concerned with producing artwork than mapping scientific data in art, his dedication to the study of clouds demonstrates his commensurate investments in the emerging cultural capital of clouds as structured forms.⁶¹⁵

Beyond the visual arts, Johann Wolfgang Goethe (1749-1832) wrote ‘Cloud Poems’ and produced a poem entitled ‘The Shape of Clouds According to Howard’ (1820). It is even reasonable to position Ruskin alongside these artists, as his work equally demonstrates a profiteering insight into the study of the structural forms of clouds. In *Coeli Enarrant.: Studies of Cloud Form and of its Visible Causes* (1885), Ruskin gathers sections on clouds extracted from Volumes Four and Five of *Modern Painters*. Though the “cloud” work is scheduled to be third in the series of extracted essays, after “rocks” and “trees,” Ruskin rushes the “clouds” ahead of “trees.” He justifies this by suggesting that ‘I am desirous of placing these cloud studies quickly in the hands of any one who may have been interested in my account of recent storms’.⁶¹⁶ The conception of clouds as elastic was hence tied into the production of the artist as free from economic structures, which itself had a role to play in a capitalist schema of aesthetic production.

⁶¹⁵ On the non-scientific forms of Constable’s clouds see Louis Hawes, ‘Constable’s Sky Sketches’, *Journal of the Warburg and Courtauld Institutes*, 32 (1969), 344–65.

⁶¹⁶ John Ruskin, ‘Preface’, *Coeli Enarrant.: Studies of Cloud Form and of its Visible Causes* (Sunnyside, Orpington, Kent: George Allen, 1885), pp.v–viii, p.v.

For Ruskin, the height of clouds denoted their flexibility, which was tied to their degree of freedom.⁶¹⁷ The highest forms of clouds, for Ruskin, were both the most altitudinous and, in that, the most elastic, the most creative, artistic and flexible. Goethe, like Ruskin, believed that ‘the clouds ascended not according to altitude but according to spirituality, culminating in the highest cirrus clouds’.⁶¹⁸ These spiritual theories of ascension were dramatically widespread even outside religious circles, on account of the desecralisation of ascension in the post-Enlightenment period. During this time, non-religious theories of ascension emerged through the practice of mountaineering. As Peter H. Hansen writes, ascending to the summits of mountains with meteorological equipment, early meteorologists would return with new data and new knowledge of the atmosphere.⁶¹⁹ This philosophical attention to the ascension hierarchies of the sky can also be traced to Immanuel Kant (1724-1804), who long before working on the *Critique of Pure Reason* (published 1781), wrote on ‘living forces’ (1747), environmental fate (1754), emergent evolution (1755) and wind dynamics (1755-58).⁶²⁰

The artistic attention to clouds in the nineteenth century can be situated in relation to these movements in science and philosophy. So doing, it begins to become apparent that the idea of elasticity is not solely a

⁶¹⁷ Williams, ‘Atmospheres of Liberty: Ruskin in the Clouds’.

⁶¹⁸ Lynn Gamwell, ‘Art in Pursuit of the Absolute: Romanticism,’ *Exploring the Invisible: Art, Science and the Spiritual* (Princeton and Oxford: Princeton University Press, 2002), pp.13–32, p.17.

⁶¹⁹ Peter H. Hansen, *The Summits of Modern Man: Mountaineering After the Enlightenment* (Cambridge, Mass.: Harvard University Press, 2013).

⁶²⁰ Martin Schönfeld, ‘Field, Being, Climate: Climate Philosophy and Cognitive Evolution’, *Climate Change and Philosophy: Transformational Possibilities*, ed. by Ruth Irwin (London: Continuum, 2010), pp.21–31.

theorem of clouds in art or of the artist painting clouds. Instead, this is an idea that primarily runs through the scientific formalization of a language for clouds. In the forthcoming section, I hence find it necessary to interrogate the scientific morphological language of clouds that came to light in the nineteenth century. Just as I worked earlier in the chapter to expose the primitivist language of Damisch's theories of clouds as elastic, I will presently expose how the scientific conception of clouds as elastic confines these forms to Eurocentric and androcentric circuits of representation, even as it seems to "liberate" clouds. This will imply the deep dependency of clouds on nineteenth-century social-numerical systems of information for sense and meaning. Whilst this language primarily takes hold in the sciences, it should be apparent by now that the meteorological concept of clouds as morphological forms carries implications for philosophy and the arts. Drawing on the work that I have already carried out to analyse the role of the elastic concept in Damisch, Deleuze and Guattari, this chapter will close by analysing the role that clouds had to play in the philosophy of Nietzsche. Reconstructing the historiographic context of Nietzsche's writings, I am going to argue that Nietzsche medicalises the scientific elasticity of clouds to the point of enmeshing the human body in their morphological language. This will expose how his works in particular exemplify the dependency of "liberated" clouds upon numerical norms of social codification.

Erotophobic Objects of Desire

The amateur meteorologist Luke Howard (1772-1864) formalised the epistemic hierarchy of clouds, in their relation to the force of wind, by instating a morphological language for cloud forms. In 1802, Howard gave a lecture outlining the basic forms of the structures of clouds, entitled ‘On the Modifications of Clouds and on the Principles of their Production, Suspension, and Destruction’. Howard delivered the lecture at the Askesian Society in London, before publishing the work as three separate articles in Vols. 16-17 of Alexander Tilloch’s *Philosophical Magazine* (1803).⁶²¹

From the outset, Howard attempts to reassure his reader that clouds are not the mere ‘sport of winds’.⁶²² He derides the pejorative description of cloud studies as a ‘useless pursuit of shadows’, while his coarsely philosophical phraseology of distinction, cause, effect, necessity and observation, is intended to substantiate this derision.⁶²³ This brings scientific import and weight to the contribution of Howard’s essay, which outlines Latinate terms for the forms of clouds. The three basic terms are ‘cirrus,’

⁶²¹ Luke Howard, ‘On the Modifications of Clouds, and on the Principles of the Production, Suspension, and Destruction; being the Substance of an Essay read before the Askesian Society in the Session 1802–3’, *Philosophical Magazine: Comprehending the Various Branches of Science, The Liberal and Fine Arts, Agriculture, Manufacturers, and Commerce* vol. 16. no. 62, ed. by Alexander Tilloch (1803), pp.97–107, pp.344–357; ‘On the Modifications of Clouds, and on the Principles of the Production, Suspension, and Destruction; being the Substance of an Essay read before the Askesian Society in the Session 1802–3’, *Philosophical Magazine: Comprehending the Various Branches of Science, The Liberal and Fine Arts, Agriculture, Manufacturers, and Commerce*, vol. 16 no. 65, ed by Alexander Tilloch (October 1803), pp.5–11.

⁶²² Howard, ‘On the Modifications of Clouds’, *Philosophical Magazine*, vol. 16 (1803) (p.97).

⁶²³ Howard, ‘On the Modifications of Clouds’, *Philosophical Magazine*, vol. 16 (1803) (p.97).

‘cumulus,’ and ‘stratus’. For Howard, these terms imply ‘simply the structure or manner of aggregation, not the precise form or magnitude’ of a cloud.⁶²⁴ Howard effectively develops ideal abstract forms for clouds, following a nineteenth-century move to link and classify phenomena.⁶²⁵ Accordingly, the syntax ‘stratus, cumulus and cirrus’ are best seen as reductive norms for structuring all variables of clouds into three basic forms.

However, Latin was a choice language for this abstract syntax, not only because it afforded translatability, but it also meant that Howard could develop a nomenclature with ostensibly elastic qualities on account of its linguistic morphological composition. For Howard, the ‘modifications’ of clouds as simple structures, admit of ‘intermediate and compound modifications’.⁶²⁶ The terms ‘cirrostratus, cirrocumulus, stratocumulus, cumulostratus’ describe what he envisaged as the transitional forms of clouds. These are forms that exist in the liminal space between the basic structures of ‘stratus, cumulus and cirrus’.

Since the sky is full of transitional forms and basic structures, Howard is drawn to delineate the atmosphere according to a hierarchy of ascent and density. A predecessor to Ruskin’s theories, Howard’s hierarchy of the skies runs from the common forms of low ‘cumulus’ clouds to the

⁶²⁴ Howard, ‘On the Modifications of Clouds’, *Philosophical Magazine*, vol. 16 (1803) (p.98).

⁶²⁵ For this view of Howard’s ‘enterprise’ see Charlotte Klonk, ‘Sketching from Nature: John and Cornelius Varley and their Circle’, *Science and the Perception of Nature: British Landscape Art in the Late Eighteenth and Early Nineteenth Centuries* (London: Yale University Press, 1996), pp.101–48, p.127.

⁶²⁶ Howard, ‘On the Modifications of Clouds’, *Philosophical Magazine*, vol. 16 (1803) (p.99).

unruly, capricious forms of high ‘cirrus’ clouds. Clouds in their higher forms ‘appear to have the least density’; are threaded, thinned and branching structures; are ‘sometimes perfectly indeterminate’ of ‘uncertain’ duration; and ‘intimately connected with the variable motions of the atmosphere’.⁶²⁷ Clouds in their lower forms ‘are commonly of the most dense structure’ or have a ‘mean degree of density’.⁶²⁸ Visible signs of the strictest degree of the law of averages, these low clouds are ‘periodic’ forms that appear and disappear ‘apace’ with the atmosphere; and ‘belong’ to the day (cumulus) or the night (stratus).⁶²⁹

Observing the formation of this entire hierarchy of the skies, Howard describes how vapour rises from the Earth and gathers through a process of ‘*nubification*’:

The vapour thus thrown into the atmosphere is diffusible therein by its own elasticity, which suffices for its ascent to any height in a perfect calm. Yet, as in this case the *inertia* of the particles of air considerably resists its diffusion, so in the opposite one of a brisk current, the vapour, by the same rule, must in some measure be drawn along with the mass into which it enters.⁶³⁰

According to Howard, all gathering vapours possess a quality of ‘elasticity’, which contest and contend with particles of the atmosphere and the system

⁶²⁷ Howard, ‘On the Modifications of Clouds’, vol. 16 (1803) (p.100).

⁶²⁸ Howard, ‘On the Modifications of Clouds’ vol. 16 (1803) (p.101).

⁶²⁹ Howard, ‘On the Modifications of Clouds’, vol. 16 (1803) (pp.101–2).

⁶³⁰ Howard, ‘On the Modifications of Clouds, and their Production, Suspension, and Destruction’, *The Philosophical Magazine* by Alexander Tilloch, Vol.16, No.62 (July 1803), pp.344–357, p.351.

of winds. The elastic force of a cloud allows it to resist or ‘be drawn along’ by currents of air. In a ‘perfect’ world, any elastic vapour can ascend to any height. In a ‘perfect’ world, elasticity would allow a cloud to self-determine its shape and form. Yet, considering the laws of the wind, in order to ascend through the strata of the atmosphere, clouds must exert and exercise capacities of elasticity against forces. Clouds must willingly be drawn along with the winds in order to ascend to the heights. Higher clouds are so because they allow their forms to be teased into thin, threaded, indeterminate structures. Lower, common clouds are a static balance of vapour. They lack the elasticity to yield to force with a resilient and flexible form.

Due to this emphasis on the elasticity of clouds, Howard’s classification system surpassed all previous efforts to classify clouds according to ‘basic’ structures.⁶³¹ This, and Howard’s enterprising nature, serves to explain the wide distribution of his work. The modification essay appeared in 1804 as a 32-page pamphlet; in 1811 in William Nicholson’s *Journal of Natural Philosophy*; in 1812 in Forster’s *Researchers* (later owned and annotated by Constable); in 1817, 1818, 1837 and 1843 as a reproduction. Howard would later develop the essay as an opening to his analysis of urban meteorology, *The Climate of London* (1818) and in his *Seven Lectures on Meteorology* (given in 1817, published in 1837, revised in 1843). In the *Seven Lectures*, Howard explicitly formulates the

⁶³¹ D. E. Pedgley, ‘Luke Howard and his clouds’, *Weather*, 58 (February 2003), 51–55; R. Clausse and L. Facy, *Les nuages* (Le Sueil, 1959); A. Fierro, *Histoire de la météorologie* (Denoël, 1991); J.–P. Chalon, *Combien pèse un nuage?* (EDP: 2002).

classification through his research into the altitude of clouds.⁶³² Through this disseminated material, Howard successfully rebutted the efforts of other writers to ‘name’ clouds, demonstrable in the uptake of his work by artists and scientists, public figures and amateur practitioners.⁶³³

The transitional forms that move between the established strata of Howard’s atmosphere, thus mediate between visual hieroglyphs of the abstract syntax or ‘basic’ structures. The transitional forms move between these structures, as if liberated from form. The continued success of these ideas starkly contrasts the reception of other efforts to classify clouds. In his *Annuaire Météorologique* (1801-2), Jean-Baptiste Lamarck had published a French-language system for naming clouds according to appearance.⁶³⁴ The nomenclature reads:

<i>List of cloud types</i>	<i>Rough Translation</i> ⁶³⁵
brumeux	thick fog, haze or mist
en voile	overcast
en labeaux	shreds of clouds
boursoufflés	puffs of cloud
en barres	bars of clouds

⁶³² Luke Howard, *Seven Lectures on Meteorology*, 2nd edn. (London: Harvey and Darton, 1843).

⁶³³ See for example B. J. R. Blench, ‘Luke Howard and His Contribution to Meteorology’, *Weather*, 18 (1963), 83–92; John E. Thornes, ‘Luke Howard’s Influence on Art and Literature in the Early Nineteenth Century’, *Weather*, 39 (1984), 252–255; Pedgley, ‘Luke Howard and his clouds’; Hamblyn, *The Invention of Clouds* (2001); Kurt Badt, *John Constable’s Clouds* (London: Routledge & Kegan Paul, 1950).

⁶³⁴ Jean-Baptiste Lamarck, *Annuaire Météorologique* (Paris: 1802), *An.* x, 3, p.149; *An.* xi, 4, p.126, p.128; *An.* xii, 5, p.159.

⁶³⁵ Translations according to John E. Thornes, *John Constable’s Skies*, p.187, table 17.

en balayures	thin bars of cloud
pommelés	dappled with small clouds
atroupés	flocks of clouds
coureurs	running clouds
groupés	group of clouds
de tonnerre	thunder clouds

The more generalised Lamarck's system became, the less it seemed capable of describing clouds in the universal manner demanded for scientific classification. Howard's system made it appear that there were elisions between the forms of shreds, puffs and bars, in Lamarck's system. That is, both the success of Howard's system and the failure of Lamarck's system enforced a codification of clouds as transitional forms that evade generic structures of classification. Clouds were emerging as essentially elastic, truly transgressive and fundamentally flexible forms.

Yet beginning to interrogate this normative syntax of basic abstract forms, it transpires that Howard hierarchised clouds on Eurocentric and androcentric terms. Howard inflects the second-declension nouns '*stratus*', '*cumulus*' and '*cirrus*', by swapping the masculine nominative, singular case of the suffix '*-us*' for the masculine, ablative case of the suffix '*-o*'. The singular terms for basic modifications and the compound terms for transitional modifications of clouds are thus gendered masculine. These compounds are only possible within the inflected grammatical system of Latin that permits Howard to capture transitional forms in his discourse (for example, the non-inflected English grammar has no ablative case, and hence cannot be manipulated using the suffix '*-o*').

Jürgen Leonhardt emphasises that by the mid-nineteenth century Latin had receded from practical applicability, and was instead being described by grammarians as an ideal language for ‘grammar and logic’, especially for instructing students in the methodologies of the natural sciences, and denoted a Western idea of ‘culture’ and ‘education’.⁶³⁶ The choice of Latin generalises the linguistic denotation of Empire into a universal language for structuring the skies. If indeed Howard’s language brought clouds into being as ‘romantic things’, as suggested in the work of Mary Jacobus, then this coming-into-being took place because the language of clouds threaded their ontological qualification through two centres of power.⁶³⁷ The stem nouns qualify clouds as scientific forms through their capacity to be thought of through the language of Empire.

This problematises the contemporary tendency to read clouds through Howard’s language, such as found in the work of Alexander Harris, who asserts that ‘clouds take their identity from process rather than permanence’.⁶³⁸ This reference to Howard and his theory of elastic forms does much more than simply recognise an “important” figure in the history of meteorology. Howard’s role in the history of climate studies dictated which centre of power would have sovereignty over the conceptual composition of the atmosphere and its forms. Harris continues, citing Hamblyn:

⁶³⁶ Jürgen Leonhardt, ‘World Language without a World’, *Latin: Story of a World Language* (London: The Belknap Press of Harvard University Press, 2013), pp.245-277, pp.271-277.

⁶³⁷ Mary Jacobus, *Romantic Things: A Tree, A Rock, A Cloud* (Chicago: Chicago University Press, 2012).

⁶³⁸ Alexander Harris, ‘A Flight: In Cloudland’, *Weatherland: Writers & Artists Under English Skies* (London: Thames & Hudson, 2015), pp.234-248, p.241.

The world seemed suddenly to have been pulled more sharply, more richly, into focus'. The whole idea of 'order' was changed: order need not be a static system, but – like the clouds – constantly moving.⁶³⁹

Such writing vivifies clouds through the objective “fact” of elasticity, through the sense of form as process. That is, in order to think of clouds as “fleeting” forms, then our conceptual framework hangs upon the British inheritance of the Roman Empire. Any romanticism of clouds as elastic “fleeting” forms that morph between basic structures is predicated on this imperial history.

Furthermore, clouds are thinkable through these frameworks because of the gendered declension of their language-being. Howard figures clouds as basic forms and as transitional interstice in form. These interstices are ascribed with the ‘/–o/’ suffix, while the basic forms are ‘/–us/’ forms. This gendered declension is only necessary due to the drive to classify, and to the guiding rubric of clouds as elastic. Indeed, under the assessment of Samuel Randalls, Kristine Harper and Paul N. Edwards, even Howard’s drive to ‘name’ clouds was eventually eclipsed by the scientific emphasis on “objective” numerical processing, statistics and calculus.⁶⁴⁰

⁶³⁹ Harris, ‘A Flight: In Cloudland’, p.242. Cf. Hamblyn, *The Invention of Clouds*, p.36.

⁶⁴⁰ Samuel Randalls, ‘Weather Profits: Weather derivatives and the commercialization of meteorology’, *Social Studies of Science* 40.5, STS and Neoliberal Science (October 2010) 705-730; Paul N. Edwards, ‘Representing the Global Atmosphere: Computer Models, Data, and Knowledge about Climate Change’, in *Changing the Atmosphere: Expert Knowledge and Environmental Governance*, ed. by C.A. Miller and P.N. Edwards (Cambridge, MA: MIT Press, 2001), pp.31–65; Kristine C. Harper,

Providing a critical framework through which to appraise this drive toward an objective language, Sandra Harding has written against the historical androcentrism of scientific pursuits for objectivity.⁶⁴¹ In particular, Harding has drawn attention to the conceptual violence of androcentrism in the maturation of nature's symbolic meaning.⁶⁴² Adopting a parallel ecofeminist position, writers such as Plumwood, Gaard and Salleh have subjected the symbolic content of the ecology to this critique of androcentrism in the natural sciences.⁶⁴³ In Plumwood's *Feminism and the Mastery of Nature* (1993), she argued the case that the content of western culture's domination of nature is contingent upon inter-related nature/culture, male/female structures of negation.⁶⁴⁴ Gaard, in her later work, contributes white/nonwhite, reason/erotic, financially empowered/impooverished and heteronormative/queer as salient dualisms.⁶⁴⁵ Colonial erotophobia, or fear of the erotic, was hence vital to the 'colonial assault on sexuality' that was staged in the nineteenth century, wherein:

The native feminized other of nature is not simply eroticized but also queered and animalized, in that any sexual behavior outside the rigid confines of compulsory heterosexuality becomes queer and subhuman.

Weather by the Numbers: The Genesis of Modern Meteorology (Cambridge, MA: Harvard University Press, 2008).

⁶⁴¹ Sandra Harding, *The Science Question in Feminism* (London: Cornell University, 1986).

⁶⁴² Sarah Harding, 'From the Woman Question to the Science Question in Feminism', *The Science Question in Feminism*, pp.15–29, p.18.

⁶⁴³ Val Plumwood, 'Androcentrism and Anthrocentrism: Parallels and Politics'; Gaard, 'Toward a Queer Ecofeminism'; Ariel Salleh, *Ecofeminism as Politics* (1997).

⁶⁴⁴ Val Plumwood, *Feminism and the Mastery of Nature* (New York: Routledge, 1993).

⁶⁴⁵ Gaard, 'Toward a Queer Ecofeminism' (p.118).

Colonization becomes an act of the nationalist self asserting identity and definition over and against the other—culture over and against nature, masculine over and against feminine, reason over and against the erotic.⁶⁴⁶

The idea of “mother nature” is brought into play by colonial erotophobia, where power is sustained through the gendered construction of male superiority, which in turn instates the normative sexual dominance of the masculine over the feminized, animalized and eroticised other.⁶⁴⁷ This draws me to reflect back on what is at stake in Ruskin’s erotophobic censorship of the cloud sketches and financial ledgers in the Turner Bequest. Ruskin did not just tear out pages he conceived of as lewd and non-artistic. In doing, he asserted an idea of creativity and the artistic as over and against the erotic. Clouds were ideal forms of truth within this regulated idea of the artistic imagination. Ruskin excluded the erotic from the production of clouds as elastic forms. The gendering of the wind as female is brought into play in this erotophobia. While the feminized nature of the wind is animalized as unruly and subhuman, clouds are given the agency to bend at will to the wind. If we follow Gaard in her queer ecofeminist argument, then Howard’s language for clouds as elastic forms is

⁶⁴⁶ Gaard, ‘Toward a Queer Ecofeminism’ (p.130–131).

⁶⁴⁷ Amber Hollibaugh, ‘The Erotophobic Voice of Women: Building a Movement for the Nineteenth Century’, *New York Native*, 7 (September 26–October 9 1982), p.33; Amber Hollibaugh, ‘Desire for the Future: Radical Hope in Passion and Pleasure’ and Gayle Rubin, ‘Thinking Sex: Notes for a Radical Theory of the Politics of Sexuality’, in *Pleasure and Danger: Exploring Female Sexuality*, ed. by Carole S. Vance (London: Pandora Press, 1989).

equally complicit in this colonial erotophobic construct.⁶⁴⁸ Howard's androcentric clouds are colonial erotophobic objects.

This goes a long way to explaining why clouds have been valorized as agentic forms, whilst the wind has been subsumed and excluded as a disorderly force of "mother nature." Eve Sedgwick in *Epistemology of the Closet* (1990) has asserted that, within normative dualisms, 'the ontologically valorized term A actually depends for its meaning on the simultaneous subsumption and exclusion of term B'.⁶⁴⁹ This analytic framework renders the suggestion that Howard 'made [clouds] real' a point for serious concern.⁶⁵⁰ 'On The Modification of Clouds' ontologically valorized clouds as elastic forms, and thereby disseminated the very idea of gendered or racialised structuration as an epistemology of the skies. This secured the assimilation of elasticity with human forms of agency whilst critically subordinating that agency to a sovereign power from which sense or meaning can be drawn.

This directs me towards nineteenth-century climatological health tourism, as a subsector of post-Enlightenment medical sciences.⁶⁵¹ The social practice of climate health tourism suggests links between emerging conceptions of the ecology and contemporaneous conceptions of the body. These links are equally suggested by siting the codification of clouds within

⁶⁴⁸ Gaard, 'Toward a Queer Ecofeminism' (p.130–131).

⁶⁴⁹ Eve Kosofsky Sedgwick, *Epistemology of the Closet* (Berkeley: University of California Press, 1990), p.10.

⁶⁵⁰ Boris Jardine, 'Made real: Artifice and accuracy in scientific illustration', *Science Museum Group Journal* 2 (Autumn 2014), <doi: <http://dx.doi.org/10.15180/140208>> [accessed 31 June 2016].

⁶⁵¹ Susan Barton, *Healthy Living in the Alps: The Origins of Winter Tourism in Switzerland, 1860-1914* (Manchester: Manchester University Press, 2008).

Hacking's understanding of the emergence of social statistical norms, as a disciplinary system of social codification.⁶⁵² Katherine Anderson and Harro Maas have extended this work to looking at clouds as statistical norms.⁶⁵³ Both Anderson and Maas emphasise the statistical substrate in the visual-paradigmatic shift in working concepts of clouds in the nineteenth century. Anderson argues that 'typical pictures of clouds' performed as visual mnemonics, arguing that these drew the scientific community into consensus about the predictably unpredictable nature of these forms.⁶⁵⁴ That is, to be predictably unpredictable replicates the aforementioned elusive and ultimately fantastical escape from rigidity or fixity.

This assimilation of cloud and body comes most clearly into view through the writings of Nietzsche. I think here of Deleuze's *Nietzsche and Philosophy*, where he writes that 'Nietzsche presents the dicethrow as taking place on two distinct tables, the earth and the sky'.⁶⁵⁵ Deleuze cites Nietzsche's use of the sky to his descriptions of the 'chance-sky' and 'innocence-sky', in *Thus Spoke Zarathustra* (written 1883-1885).⁶⁵⁶ Yet as I will demonstrate below, Nietzsche's use of the sky to model the rupture of metaphysical form is not limited to one passage in one text. Rather, clouds

⁶⁵² Hacking, *The Taming of Chance* (1990).

⁶⁵³ Katharine Anderson, 'Looking at the sky: The Visual Context of Victorian Meteorology', *British Journal for the History of Science*, 36.3 (September 2003), 301–332; Harro Maas, 'Of clouds and Statistics: Inferring Causal Structures from the Data', *Measurements in Physics and Economics Discussion Paper Series: DP MEAS 7/99* (London/Amsterdam, 1999), n.p.

⁶⁵⁴ Anderson, 'Looking at the sky', p.313.

⁶⁵⁵ Gilles Deleuze, 'The Tragic', *Nietzsche and Philosophy*, pp.1–35, p.23.

⁶⁵⁶ Deleuze, 'The Tragic', *Nietzsche and Philosophy*, p.24. Cf. Friedrich Nietzsche, *Thus Spoke Zarathustra*, trans by R. J. Hollingdale (London: Penguin Books, 1965), § Before Sunrise, p.186.

repeatedly reappear within the otherwise multifarious imagery of Nietzsche's works.

It appears that Nietzsche identified clouds as imagery for illustrating his philosophy from the books in his personal library. The German edition of Tyndall's *Forms of Water* was purchased and owned by Nietzsche, alongside German editions of Friedrich Schoedler, *Book of Nature: A Popular Cyclopædia of the Natural and Physical Sciences* (1814) and Pierre Foissac, *De la météorologie: dans ses rapports avec la science de l'homme et principalement avec la médecine et l'hygiène publique* (2nd Edn. 1854, 1st Edn. [n.d.]), who also published *l'Influence des climats sur l'homme* translated into German as *Über den Einfluß des Klima auf den Menschen* by August Heinrich Ludwig Westrumb (1840).⁶⁵⁷ As Gregory Moore has noted, Nietzsche did not read these books for their philosophical merit, but because he was ill and so he was approaching his own body pragmatically as someone obsessed with finding a cure.⁶⁵⁸ Between the years of 1871 and 1889, Nietzsche was chronically ill, comprising of headaches and poor digestion. Moore narrates how this illness brought Nietzsche to obsess over the weather:

during the 1880s Nietzsche began to realize that experimenting with diet was not the only way to improve his poor digestion and headaches.

⁶⁵⁷ Pierre Foissac, *Über den Einfluß des Klima auf den Menschen* (Göttingen: Vandenhoeck & Ruprecht, 1840).

⁶⁵⁸ Gregory Moore, 'Nietzsche, Medicine and Meteorology', *Nietzsche and Science*, ed. by Gregory Moore and Thomas H. Brobjer (Aldershot: Ashgate, 2004), pp.71–90. Moore historicises Nietzsche's illness through the archive of Nietzsche's personal library. See also Thomas H. Brobjer, 'Nietzsche's Reading and Private Library, 1885–1889', *Journal of the History of Ideas* 58.4 (October 1997) 663–693.

Climate and the weather played an increasingly important role in his thinking about his body and his various illnesses [... p.80] he spent the rest of his intellectual life wandering Europe in search of the perfect climate [...] Nietzsche's letters are filled with detailed, almost obsessive, descriptions of the weather.⁶⁵⁹

Having worked in The Nietzsche Archive, Weimar, Moore describes the aforementioned texts contained in Nietzsche's personal library. Nietzsche's late writings post-date the publication of these studies in the natural sciences, with *Daybreak* written in 1880, *The Gay Science* between 1881-1882, *Thus Spoke Zarathustra* between 1883-1885, and *Ecce Homo*, the semi-autobiographical work, in 1888. R.J. Hollingdale has detailed Nietzsche's movements during this time, describing his illness from 1871, and his subsequent climate health trips to Sils-Maria in the Alps, from as early as 1881, where he cites Nietzsche as pronouncing, 'I know of nothing more suited to my nature than this piece of high land'.⁶⁶⁰ In *Ecce Homo*, Nietzsche describes a visit from Heinrich von Stein at Sils-Maria, describing his feeling:

as if transported by a storm-wind of freedom, like one suddenly raised to *his own* heights and given wings. I kept telling him it was the result of the

⁶⁵⁹ Moore, 'Nietzsche, Medicine and Meteorology', p.79.

⁶⁶⁰ Nietzsche cited in R. J. Hollingdale, 'Introduction/Chronology of Nietzsche's Life', in Friedrich Nietzsche, *Ecce Homo: How One Becomes What One Is*, trans. by R. J. Hollingdale (Harmondsworth: Penguin Books, 1979), pp.7-29, p.26.

fine air up here[...] that you could not stand 6,000 feet above Bayreuth and not notice it.⁶⁶¹

If we triangulate this trajectory, that Nietzsche took to and from Sils-Maria to experience the clear air, with Moore's fascinating work in *The Nietzsche Archive*, then it seems entirely reasonable to surmise that Nietzsche's celebration of the air at Sils-Maria is related to his readings in climate and the weather. If this is the case, then the aforementioned texts in the natural sciences are background material in Nietzsche's conception of the body.

Fascinatingly, each of these texts contains passages that either directly repeat or visit Howard's classification of clouds. Schoedler, in his *Book of Nature*, describes Howard's classification of clouds, writing that, '[v]arious names have been given to the clouds, according to their form and mass: thus there are the *feathery cloud* or *cirrus*, the *dense cloud* or *cumulus*, and *stratified clouds* or *stratus*, which again merge into a variety of others, such as *cirro-cumulus*, *cumulo-stratus*, &c'.⁶⁶² He also describes 'violent winds' that will 'often tear away with them all moveable objects'.⁶⁶³ Schoedler thus subscribes to the dichotomy of winds and clouds, and to the intersecting structuration of clouds into the Latinate forms. In his introductory remarks to *Forms of Water*, Tyndall suggests that, 'the human mind is not satisfied with observing and studying any natural occurrence alone, but takes pleasure in connecting every natural fact with what has

⁶⁶¹ Nietzsche, *Ecce Homo*, Why I Am So Wise §4.

⁶⁶² Friedrich Schoedler, 'Phenomena of Nature—Heat', *Book of Nature: A Popular Cyclopædia of the Natural and Physical Sciences*, 5th edn. trans. by Henry Medlock (London: Richard Griffin and Co., 1859), pp.70–90, p.79.

⁶⁶³ Schoedler, 'Phenomena of Vibration', *Book of Nature*, pp.64–120, p.75.

gone before it, and with what is to come after'.⁶⁶⁴ This claim about the human tendency to impose causality on nature, frames a later passage regarding the perception of clouds:

You frequently see a streamer of cloud many hundred yards in length drawn on from an Alpine peak. Its steadiness appears perfect, though a strong wind may be blowing at the same time over the mountain head. Why is the cloud not blown away? It *is* blown away; its permanence is only apparent. At one end it is incessantly dissolved, at the other end it is incessantly renewed: supply and consumption being thus equalized, the cloud appears as changeless as the mountain to which it seems to cling.⁶⁶⁵

Tyndall belies any apparent permanence of clouds as forms, alluding to the illusion of constancy. The seemingly permanent cloud streaming from the end of the Alpine peak is in a state of becoming. The cloud that we see before us is not “real,” insofar as the impression we have of a single, static cloud is a fabrication. Clouds are not beings, for Tyndall; the becoming of clouds is their reality.

Foissac's *De la Météorologie*, equally qualifies clouds as constantly changing forms in nature. Foissac writes, ‘Les formes des nuages sont très diversifiées et souvent très capricieuses [The forms of clouds are very diverse and often changing in shape]’.⁶⁶⁶ He continues:

⁶⁶⁴ John Tyndall, *The Forms of Water in Clouds and Rivers, Ice and Glaciers*, 7th edn. (London: C. Kegan Paul and Co., 1878), p.1 (§1.Clouds, Rains, and Rivers).

⁶⁶⁵ Tyndall, *The Forms of Water*, pp.28–9 (§8.Mountain Condensers).

⁶⁶⁶ Pierre Foissac, *de la Météorologie dans ses rapports avec la science de l'homme et principalement avec la médecine et l'hygiène publique* (Londres:

Ces nuages ont fourni au génie des poètes les plus riches descriptions, leurs formes capricieuses représentant tous les êtres de la nature ; car, on le sait, l'âme vivement émue est disposée à la superstition ; elle change en êtres réels ses rêves fantastiques, croit ce qu'elle désire, et prête de la couleur, une forme, un corps aux conceptions vaporeuses de son imagination

[These clouds have provided richer descriptions to the genius of poets, their shifting and transforming shapes representing all the beings of the natural world; because, as we know, the deeply moved soul is predisposed to superstition; it changes to real beings fantastical dreams, believes what it wants, and will lend colour, a shape, bodying forth conceptions transforming fantastical dreams into real beings.]⁶⁶⁷

He continues this passage with a reference to Howard's classification, acknowledging scientific fact, following this reflection on poetic shifting and transforming fantasy. It is difficult to overlook the connection between Foissac's description here, and the 'image made by chance' explored in the previous chapter.⁶⁶⁸ What has shifted in this passage is the move from this previously aesthetic construct toward the idea of scientific objectivity. Clouds now abide with stochastic law, and this law allows them to perform according to chance dynamics, shifting and transforming their shapes as if predictably unpredictable. In this respect, it is significant that this passage features in a text claiming to deal with the science of man (*la science de l'homme*), principally with regard to medicine and public health

Librairie de L'Académie Impériale de Médecine, 1854), p.65 (§.Des nuages). Translation my own with thanks to Claire Malaika Tunnacliffe.

⁶⁶⁷ Foissac, *de la Météorologie*, p.65.

⁶⁶⁸ Janson, 'The "Image Made by Chance" in Renaissance Thought'.

(*principalement avec la médecine et l'hygiène publique*), through meteorology. Nineteenth-century natural sciences were not hermetically discreet from contemporaneous conceptions of the body. Rather, Foissac's work suggests a porous boundary between these fields. Indeed, works that thread together medicine and meteorology exploit the human body as a site for thinking through the emerging stochastic law of clouds. Bound to climatic changes, variations and fluctuations of the human body are brought into dialogue with the elasticity of clouds.

Appreciating this overlap is key to understanding the commensurate project of formulating variable climatic dynamics within meteorology, and codifying the human body as a site of social norms. Nietzsche's readings at this overlap were for pragmatic purposes, and hence while meteorology and medicine inevitably extended the metaphorical resources of his writing, as Moore has highlighted, Nietzsche was not seeking abstract imagery but the application of meteorology to his own body.⁶⁶⁹ As Moore highlights, Nietzsche followed the nineteenth-century trend for conceptualising the body as a machine or engine that needs vital energy for consumption and renewal, with the nervous system as a mediating sensation-motor of this body-machine—a boundary between mind and body.⁶⁷⁰ Using the body-machine as a critical key to Nietzsche's works, it becomes apparent that his critique of religious asceticism, neurasthenic debility and Cartesian rationality, was Nietzsche's diagnostic of prevailing social pathologies. The dominance of the mind over the body was a European pathogen caused by Cartesian doubt of the body. Moore notes that 'his late notebooks

⁶⁶⁹ Moore, 'Nietzsche, Medicine and Meteorology', p.72.

⁶⁷⁰ Moore, 'Nietzsche, Medicine and Meteorology', p.74.

obsessively list the pathologies he sees afflicting European civilization'⁶⁷¹ Metaphysics was to Nietzsche one such 'pathology': an epidemic of reason over vitality, a social sickness that drew the mind away from the reality of the body.

Where Nietzsche becomes enraged about this pathological affliction, clouds illustrate his desire to cure European civilization of Cartesian doubt. In *Thus Spoke Zarathustra*, Nietzsche writes:

O sky above me, you pure, lofty sky! This is now your purity to me, that there is no eternal reason-spider and spider's web in you –
that you are to me a dance floor for divine chances, that you are to me a god's table for divine dice and dicers!⁶⁷²

Here clouds model Nietzsche's repugnance toward the social sickness of metaphysics. Through clouds, he models his alternative conception of nature as 'chaos—in the sense not of a lack of necessity, but of a lack of order, form, arrangement, beauty, wisdom, and whatever other names there are for our aesthetic anthropomorphisms'.⁶⁷³ This conception of the world as chaos valorises chance and unpredictability, as a 'nonpurposive becoming' or a 'game of chance and necessity', according to Christopher Cox.⁶⁷⁴ Hence, through his work, Nietzsche re-identifies the body with an idea of nonpurposive becoming, which he here illustrates with clouds.

⁶⁷¹ Moore, 'Nietzsche, Medicine and Meteorology', p.74.

⁶⁷² Nietzsche, *Thus Spoke Zarathustra*, p.186 (§.Before Sunrise).

⁶⁷³ Nietzsche, *The Gay Science*.

⁶⁷⁴ Christopher Cox, 'Becoming and Chaos or *Différance* and *Chaosmos*,' *Nietzsche: Naturalism and Interpretation* (London: University of California Press, 1999), pp.169–212, p.212.

Clouds illustrate the indeterminate nature of the human body—its general flux of vital energy. Fascinatingly, F. D. Luke has highlighted the eroticised dimension of Nietzsche’s cloud imagery, arguing that ‘the images – height and depth, stair-climbing and cloud-like hovering’ illuminate Nietzsche’s sexual fantasies and ‘Dionysian euphoria’.⁶⁷⁵ Reading passages from Nietzsche’s *Thus Spoke Zarathustra*, it becomes clear how Luke came to identify erotic euphoria with Nietzsche’s cloud imagery:

Alas, there are so many things between heaven and earth of which only the poets have let themselves dream!

And especially *above* heaven: for all gods are poets’ images, poets’ surreptitiousness!

Truly, it draws us ever upwards – that is, to cloudland: we set our motley puppets on the clouds and then call them gods and supermen.

And are they not light enough for these insubstantial seats? – all these gods and supermen.

Alas, how weary I am of the unattainable that is supposed to be reality. Alas, how I am weary of the poets!⁶⁷⁶

The euphoric repudiation of metaphysics positions reason above the phenomenal world, in a space of desire. Where Zarathustra says ‘truly, it draws us ever upwards’, he qualifies surreptitious metaphysical images as fabrications or ‘motley puppets’ that are set upon the clouds. In the following enunciation, ‘they’ refers to the ‘light’ gods and supermen; the

⁶⁷⁵ F. D. Luke, ‘Nietzsche and Imagery of Height,’ *Nietzsche: Imagery and Thought*. ed. by Malcolm Pasley (London: Methuen Press, 1978), pp.104–122, p.109.

⁶⁷⁶ Nietzsche, *Thus Spoke Zarathustra*, p.150 (§.Of Poets).

‘insubstantial seats’ refers to the clouds of cloudland. This assimilates the lightness of the gods with the acclaimed insubstantiality of clouds. This carries with it the metaphoric association of the gods, supermen and the clouds. Nietzsche is thus here individuating distinct forms of the insubstantial metaphorical vehicle of clouds to ‘seat’ the tenor of ideals. Through this metaphorical interaction of clouds and ideals, and the language of appeal or desire, Nietzsche asserts the role of the body in the production of metaphysics. He seeks to undo both the stability of metaphysical ideals as world-form and of the body as subject-form.

So the role that clouds play in Nietzsche’s writing is one of illustrating his desire to pull apart metaphysical ideas, in an effort to cure the sickness of European rationality and re-assert the indeterminate body. Nietzsche hence uses imagery that evokes cloud dispersal and cloud deformation processes to refer to the power of his writing. Zarathustra is lightning: ‘near the seat of the clouds: is it waiting, perhaps, for the first lightning?[...] Yes, Zarathustra[...] you are the lightning’.⁶⁷⁷ The thought of eternal return visits Zarathustra who is figured as a cloud ready to burst with lightning, ‘like cloud heavy with lightning and like swelling milk-udder – ready for myself’.⁶⁷⁸ Zarathustra is ‘a prophet and full of prophetic spirit[...] like a heavy cloud[...] pregnant with lightnings which affirm Yes! laugh Yes! ready for prophetic lightning-flashes’.⁶⁷⁹ Zarathustra is thus associated with meteorological phenomena symbolic of the dispersal of congested

⁶⁷⁷ Nietzsche, *Thus Spoke Zarathustra*, p.70 (§.Of The Tree On the Mountainside).

⁶⁷⁸ Nietzsche, *Thus Spoke Zarathustra*, p.231 (Of Old and New Law-Tables §5).

⁶⁷⁹ Nietzsche, *Thus Spoke Zarathustra*, p.244 (The Seven Seals §5).

cloud forms, through being constantly appositionally associated with clear air and cloudless skies—‘a prophet of the lightning and a heavy drop *from* the cloud [my emphasis]’.⁶⁸⁰ He arrives as a storm that dispels clouds: ‘the tension of my cloud has been too great: between laughter-peals of lightning I want to cast my hail showers’; ‘with the storm which is called ‘spirit’ I blew across your surging sea; I blew all clouds *away* [my emphasis]’.⁶⁸¹

For Nietzsche, the instability of clouds becomes a symbolic medium for illustrating the breaking or tearing of metaphysical ideals and for asserting the nonpurposive becoming of the human body. What this posits is a model of the body as creative and indeterminate, recapitulating the formula of agency in Ruskin. As Deleuze writes in his seminal work on Nietzsche, the main teachings of Zarathustra are ‘creation and joy’:

Against the *fettering* of the will Nietzsche announces that willing *liberates*;
 against the *suffering* of the will Nietzsche announces that the will is *joyful*.
 Against the image of a will that dreams of having *established* values
 attributed to it Nietzsche announces that to will is *to create* new values.⁶⁸²

The medicalization of meteorology is not just a backdrop to this Nietzschean ideal of a liberated will. Nietzsche modelled indeterminacy, creativity and joy, through his experiences reading meteorology, such that the ‘chaos’ of clouds became a method of curing or liberating the creativity of the will. While Deleuze sought to highlight the critical potential of this

⁶⁸⁰ Nietzsche, *Thus Spoke Zarathustra*, p.45 (Zarathustra’s Prologue §5)

⁶⁸¹ Nietzsche, *Thus Spoke Zarathustra*, p.109 (The Child with the Mirror); p.238 (Of the Great Longing).

⁶⁸² Deleuze, ‘Critique’, *Nietzsche and Philosophy*, p.79.

idea, as tantamount to deconstructing the '*established* values' of capital, this notion of indeterminacy or nonpurposive becoming is equally grounded in a dynamic of primitive accumulation. The very idea of elastic creativity or freedom carries the effect of delegitimizing and de-sublimating, through the erotophobic desire for "native" form. Where clouds are ideographic of freeze-dried flexibility, this paradigm does not represent the "fleeting" freedom of clouds as forms liberated from the very confines of form. Rather, it re-routes clouds through the deep conceptual history of the elastic "zero degree" that promises to bind the human body to processes of abstraction and accumulation.



Figure 10: Catherine Opie, *Self-Portrait/Cutting* (1993)

Conclusion: Little White Fluffy Cloud

But this difference between the instrument as a whole and its daily wear and tear, is much greater in a machine than in a tool, because the machine, being made from more durable material, has a longer life; because its employment, being regulated by strictly scientific laws, allows of greater economy in the wear and tear of its parts, and in the materials it consumes; and lastly, because its field of production is incomparably larger than that of the tool.⁶⁸³

Marx—Volume One, *Capital* (1867)

⁶⁸³ Marx, *Capital*, vol. 1, p.268 (pt.4, ch.15).

But if our vision halts there, let the imagination pass beyond. It will be more likely to weary of forming ideas than will Nature of supplying the material for them.⁶⁸⁴

Pascal—*Pensées* (1670) cited in Damisch, *A Theory of /Cloud/* (1972)

In Catherine Opie's *Self-Portrait/Cutting* (1993), she disfigures the normative family construct by lacerating her skin with an image of a "happy family" such as a child might draw, yet with two stick-figure women holding hands.⁶⁸⁵ For me, the physical vandalism of this work suspends its meaning within an extraordinary poetics of disfigurement, a terrible paragon of the perceived queer mutilation of heterosocial and heterosexual binaries. I have wondered about the role clouds have to play in this haemorrhaging of sense and meaning: above the stick-figure women, in the sky beside the house, a cartoon cloud escapes from Opie's skin. This "little white fluffy cloud" has affected me profoundly over the course of this project, a talisman for what might be possible to say about clouds and an antecedent to accruing so much thinking on the conceptual history of an oft-unremarked "accessory." Opie makes absolutely palpable the fact that clouds cannot be overlooked; that as much as clouds may figure in the doodle of a child, clouds are contiguous with the constantly disfiguring limits of discursive coherence. Clouds are part of the metaphorical register of Opie's work, the

⁶⁸⁴ Damisch, 'The Powers of the Continuum', *A Theory of /Cloud/*, p.181. Cf. Pascal *Pensées*, ed. by Brunschvicg, sec. 2, no. 72; English translation: *The Essential Pascal*, ed. by Robert W. Gleason, trans. by G. F. Pullen (London: New English Library, 1966).

⁶⁸⁵ Catherine Opie, *Self-Portrait/Cutting*, the artist's body, 1993.

metaphorical register of the social, participating in the image-sum through which the subject is articulated into social form.

This is not the same as saying that humans have an “intimate relationship with the skies.” Rather, the anthropic history of the skies is a select narrative of restriction, of delimiting whose histories and exactly whose future we are talking about when we speak through the “human relationship with the skies.” There are many concepts of clouds that have been dislodged from any hold they have on anthropomorphism, human representation or veracity in order to reify the concepts that best serve the ends of capital. Why do works like Opie’s not feature in the consecrated canon of clouds, I wonder, where Howard’s *‘On the Modifications of Clouds’* is read and circulated, repeated and quoted, as if its idiomatic function served anything more than to re-disclose the literary imaginary of colonialism? Maybe Opie’s bleeding cloud says more about the “human” relationship with the skies than does Howard’s essay. The mutilation of a body that assumes the inclusion of a “little white fluffy cloud” carries the deep impression of a conceptual history not about imagining, day-dreaming or drift, but about scarring, the mental and spiritual barrenness of finding oneself incapable of identification, of being dislodged from the presumptive bases of social subject-constitution.

In my thinking, clouds are not mere accessories to the metaphorical register of the social. Rather, the twin physical processes of capital abstraction and accumulation are sustained through the continually extending scale of separation that clouds are mechanised to reinforce. Marx figures this proliferation of separation as the abstraction of the worker from

their labour, such that they become a waged worker.⁶⁸⁶ For writers such as Vora, Robinson and Singh, this process of primitive accumulation is better thought of as the racialised and gendered separation of life from its vital energy, such that life becomes a resource for the accumulation of wealth.⁶⁸⁷ More expansively, drawn along the lines of race, gender, sex, sexuality, religion, ethnicity and age, global environmental politics have become an arena for this process, or what Nixon calls the ‘slow violence’ of primitive accumulation.⁶⁸⁸ Lisa Vanhala and Cecilie Hestbaek argue that the United Nations Framework Convention on Climate Change (UNFCCC), only agreed to adopt the 2013 Warsaw International Mechanism (WIM) on Loss and Damage, following initial contention between the 77 developed states and NGO allies, because of a consensus to subscribe to the political rhetoric of ‘loss and damage’.⁶⁸⁹ The concept of loss and damage is, for Vanhala and Hestbaek, subliminally structuring global environmental justice politics into questions of liability and compensation. This economic logic has come to determine which technocratic policy solution or institutional prescription will ‘minimize’ environmental injustice, and whose environmental values can be over-looked as irrelevant or even harmful.⁶⁹⁰ In this way, environmental justice law makes indigenous concepts for the ecology subservient to the *modus operandi* of accumulating wealth.

⁶⁸⁶ Marx, *Capital*, vol. 1, p.502 (pt.8, ch.26).

⁶⁸⁷ Vora, *Life Support* (2015); Robinson, *Black Marxism* (1983); Melamed, ‘Racial Capitalism’; Singh, ‘On Race, Violence and So-Called Primitive Accumulation’.

⁶⁸⁸ Nixon, *Slow Violence* (2011).

⁶⁸⁹ Lisa Vanhala and Cecilie Hestbaek, ‘Framing Climate Change Loss and Damage in UNFCCC Negotiations’, *Global Environmental Politics*, 16.4 (November 2016), 111–129. DOI: 10.1162/GLEP_a_00379 [accessed 28th July 2017].

⁶⁹⁰ Vanhala and Hestbaek, ‘Framing Climate Change’.

The idea of the anthropocene is a facet of this institutional paradigm shift in global justice politics. The anthropocene is what Marco Amiero and Massimo de Angelis term a ‘grand narrative’, which posits a global “movement” as if to combat the effects of global warming, but that leaves no space for the critique of structural injustice.⁶⁹¹ These structural injustices are not merely the occlusion of one set of environmental values by another, as opined by Martinez-Alier, indicating the victory of the rich over the poor in global policy and law.⁶⁹² The structural injustices elided from the Grand Narrative of Global Warming exist as motors of primitive accumulation. These motors run on the salient historical dualisms of nature/culture, white/nonwhite, reason/erotic, financially empowered/impoverished and heteronormative/queer.⁶⁹³ The transformation of life into a representational field for global environmental “justice” takes place through these historical dualisms. For this reason alone, it has become a priority to command the rhetorical paradigms of global environmental policy. Controlling emissions through conceptualisations of the ecology is not about finding a “happy ending” for the Grand Narrative of Global Warming. Commanding these concepts is about dominating the political sphere of environmental values. It is about inducing, proliferating and naturalising the social separatism that capital needs to function, through historical binaries allowing all living form to be continually opened to accommodating the extending logic of capital.

⁶⁹¹ Marco Amiero and Massimo de Angelis, ‘Anthropocene: Victims, Narrators and Revolutionaries’, *South Atlantic Quarterly*, 116.2 (April 2017), 345-362 (p.346).

⁶⁹² Martinez-Alier, *The Environmentalism of the Poor* (2002).

⁶⁹³ Greta Gaard, ‘Toward a Queer Ecofeminism’ (p.118).

Even as the imagined “we” of global environmental discourse debates the future of the ecology, concepts are brought into play that promise not only to re-assert the industrial patterns of production and waste that have brought “us” to where “we” are, but that also carry the promise of expropriation. Humans have to become less and more than they already are, in service of the ecology. The representative effect of corporate and State policies regulating the hazardous regime of petrochemicals were subject to the critique of the 1962 publication of Rachel Carson’s *Silent Spring*, leading environmental historians such as Chris Sellers, Jo Melling, Paul Erker, Nancy Langston and Stefania Barca to map global configurations of environmental injustice onto the production of ‘sacrificial zones or disposable bodies’.⁶⁹⁴ Environmental values work in the service of these regimes, abstracting bodies and entwining their corporeality into something far “greater” than them. The appraisal of an ecological form as a concept in which all cultures can have their “share”, creates a plenum of false collectivity captured in the iconicity of that form. The ecological icon is the conceptual medium through which the sacrifice of land and resources and the disposal of bodies are transformed into the promise of Green Salvation. Through the concept-being of the ecology the hazardous regime makes its

⁶⁹⁴ Rachel Carson, *Silent Spring* (London: Penguin Books, 2000). Chris Sellers and Jo Melling, *Dangerous Trades: Histories of Industrial Hazards in a Globalizing World* (Philadelphia: Temple University Press, 2012); Paul Erker (ed.), *Global Environment: A Journal of History and Natural and Social Sciences*, RCC Special Issue on Hazardous Substances 7.1 (2014); Nancy Langston, *Toxic Bodies: Hormone Disruptors and the Legacy of DES* (New Haven: Yale University Press, 2010). Quotation is from Stefania Barca, ‘Telling the Right Story: Environmental Violence and Liberation Narratives’, *Environment and History*, 20.4 (2014), 535–546 (p.535).

clandestine passage into treaties, law and trade agreements—the false promise for the future made in the service of the few.

Maintaining this balance of care and corruption is a delicate act. In order to sustain both the inner workings of capitalist production and the antithetical anterior of ecological salvation, every structure of labour has to become spectacular, mysterious, or even divine. It would be too much to punch through the surface and see the dirt, sweat, squalor and smog of profit.⁶⁹⁵ Outsourcing is a way to hide the structures of labour, not only so that the assemblage can become morally sustainable, but so as to imbue the production with an aura of the ecologically pure, the desire of the environmentally divine. The spectacle of industrial cloud computing is a conceptual production fronted by this ecologically divine façade of desirability. Backstage, subaltern Bangladeshi workers are solving ‘one thousand CAPTCHA problems[...] for less than \$1.50 a batch’.⁶⁹⁶ Meanwhile, thousands of migrant Filipino, Latino, Vietnamese, Korean and Cambodian migrants are working either on production lines in Silicon Valley or in domestic settings on the periphery of this technological haven, or even in prison, to build high tech industrial goods like semiconductor chips or PC boards.⁶⁹⁷

These domestic migrant workers in America exemplify a sociotechnical twist in the deep history of economies of care, which can be critically contextualised through the work of Federici, Fortunati, Mariarosa

⁶⁹⁵ Bryan Walsh, ‘Your Data is Dirty: The Carbon Price of Cloud Computing’; Richard Maxwell and Toby Miller, ‘Our Dirty Love Affair with Technology’ (p.115–126).

⁶⁹⁶ Hu, ‘Conclusion’, p.146.

⁶⁹⁷ Naguib Pellow and Park, *The Silicon Valley of Dreams*, pp.73–82, p.166, p.185. Cf. Erlich, ‘Prison Labor’.

Dalla Costa, Selma James and more recently Jennifer Morgan and Tadiar.⁶⁹⁸ In particular, Federici has written extensively about the emergence of capital from feudal society as and through the mystification of housework, family life, child-raising, sexuality, male-female relations and the relation between production and reproduction.⁶⁹⁹ For Tadiar, at each phase-shift of globalization, the way that this mystification has unfolded can be summarised through the ‘feminization of labour’, a rubric for the devalued lives and experiences of the population of the Philippines, who have gone unrecognised as the engine of global capitalism.⁷⁰⁰ The domestic migrant workers who are working to sustain the illusion of digitality emblemise this mystification of productive labour. Here it becomes apparent that domestic outsourcing goes hand-in-hand with the maximal flexibilisation of labour, which is equally useful for abstracting the anterior of capitalist production from the spectacle of capital’s moral ecology. Labour must be flexibilised beyond its status as work—casualised to the point of incomprehension. That is, domestic (or incarcerated) forms of casualisation derail the idea of the “worker.” The worker is instead a fluctuating unit of work, drifting across the boundary between low-waged and unwaged, affective labour, as if all contractual economies possessed their own

⁶⁹⁸ Silvia Federici, *Wages Against Housework* (London: Falling Press Wall, 1975); *Revolution at Point Zero* (2012); *Caliban and the Witch* (2004); Fortunati, *The Arcane of Reproduction* (1995); Mariarosa Dalla Costa and Selma James, *The Power of Women and the Subversion of the Community* (Bristol: Falling Wall Press, 1975); Jennifer Morgan, *Laboring Women* (Philadelphia: Pennsylvania Press, 2004); Neferti X. M. Tadiar, *Things Fall Away* (Durham: Duke University Press, 2008); ‘Life-Times of Disposability within Global Neoliberalism’.

⁶⁹⁹ Federici, *Caliban and the Witch* (2004).

⁷⁰⁰ Tadiar, *Things Fall Away* (2008).

feminized margin of care—a band of “zero-hours” wrapped around the nucleus of the human zero degree.

As an object of moral theorising, the cloud concept marks the erotophobic, transphobic, racist, homophobic desire for “little white fluffy” modes of being. An extremity of the sovereignty that rides on the history of settler-colonialism and imperialism, “little white fluffy clouds” have come to denote the severity of social death secured by the reproductive domestic labour of technological goods. As argued in chapter two, the ecological emblem serves the role of naturalising this separation of worker from life, into what Marx calls the ‘premature death’ of ‘veiled slavery’.⁷⁰¹ This vandalism of life serves more than to create a space where the dirty labour of digital capitalism can be exported. It produces a backstage for sustaining the moral spectre of digital capitalism. Realising that this backstage is in part made up of migrants working in domestic settings shifts the intended temporal emphases of capital’s moral theorising about the future of the ecology. Rather than holding and nurturing “our” promise for the future of “our human planet,” the futurity that the morality of capital signals (which so often centres around the idea of “mother earth”) seeks instead to command productive and reproductive insurgency and counterinsurgency, which is, in the words of Weinbaum echoing Foucault, the ‘motor of history’.⁷⁰² As Hartman writes, ‘gestational language has been key to describing the world-making and world-breaking capacities of racial

⁷⁰¹ Marx, *Capital*, vol. 1, p.186 (pt.3, ch.10), pp.533–540 (pt.8, ch.31).

⁷⁰² Weinbaum, ‘The Afterlife of Slavery and the Problem of Reproductive Freedom’, (pp.53–54). Cf. Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France, 1978–79* (New York: Palgrave Macmillan, 2008).

slavery’, through the theft, regulation and destruction of the black woman’s body through domestic, reproductive and sexual labour.⁷⁰³ That is, genealogy is entirely at stake in power, and hence to make life contingent upon a moral promise for an ecological future renders bodies as genealogically disposable, bringing into sharp focus the forms of sovereignty over genealogical and reproductive futurity that this “promise” for “our earth” really implies.

No wonder then that disorientation or the “state of becoming” is a facet of late capitalism. With disorientation as the *modus operandi* of late capitalism, elasticity becomes feasibly a way of life—which is of course a form of social death, projecting the subject into a disenfranchised state of becoming. In this sense, dispossession is not a state of being “below,” but the state of being both “before” and “after”—the state of being the prior forming and the future of forming that has no hold on the present. This is what Rosenberg means when they write of the ‘two temporalities’ of primitive accumulation by dispossession.⁷⁰⁴ Normative futurity depends on the ancestralness of object-ontologies.⁷⁰⁵ It is this ancestralness that puts the present into a state of elastic warp. This elastic warp is the lived experience of abject-subjects, through whom normative security and the narrative of the

⁷⁰³ Hartman, ‘The Belly of the World: A Note on Black Women’s Labor’, (p.166). See also Silvia Federici with Nicole Cox, ‘Counterplanning from the Kitchen (1975)’, pp.28–40: ‘In some countries we are forced into an intensive production of children, in others we are told not to reproduce, particularly if we are black or on welfare, or tend to produce “troublemakers.” In some countries we produced unskilled labor for the fields, in others we produce skilled workers and technicians. But in every country our unwaged work and the function we perform for capital are the same’. p.31.

⁷⁰⁴ Rosenberg, ‘The Molecularization of Sexuality’.

⁷⁰⁵ Rosenberg, ‘The Molecularization of Sexuality’.

origin are secured. That is, abject-subjects are figurations of the post-structural economic logic of the gerund, or ‘–ing’ words, where life is ‘all change, no future’.⁷⁰⁶

Surplus populations who embody the surplus value of capital praxis are projected into the future *as surplus* through the speculative, risk-taking ventures that embolden the futurity of globalisation, neoliberalism, late capitalism or financialisation. Writing against this temporal dimension, of what she calls the ‘life-times’ of primitive accumulation, Tadiar has argued that land appropriation is key to the temporal dispossession of life, writing at length:

[Surplus populations] constitute the virtual time zone of financial speculation within which new opportunities of value extraction and absorption of the risks of these maneuvers are located. If indeed financial speculation finds opportunities for value extraction in the virtual zone of time — after all, what are commodity futures and “securities” (risk bundles) if not temporal commodities — then surplus populations are nothing but an entire global zone of disposable life-times for speculative maneuvers.⁷⁰⁷

This emphasis on time and land re-visits the critical rejoinder of primitive accumulation from the circumstance of globalisation and highlights a central axis of my argument. How the ecology is conceptualised through its regulation, control and legislation comes to figure who is thought to relate

⁷⁰⁶ Moretti and Pestre, ‘Bankspeak’, p.23.

⁷⁰⁷ Tadiar, ‘Life-Times of Disposability within Global Neoliberalism’ (pp.28–29).

to that ecology in the promise of its future. The regulation of land is an always-speculative agenda, carrying implications not for the promise “we” owe to “our mother earth” but for the degree of flexibility that can be imposed upon life in its futurity, through the speculative, deregulated, risk-taking moves of capital. This means to imply that the flexibilisation of labour is about more than the transformation of life into a material for capital, but also about the conceptual (via legislative or regulatory means) abstraction of populations from a “material real” into the open space functioning as a virtual cushion for the speculative play of capital’s agenda for flexibility and elasticity.

Clouds are being put to work in awesome ways to perform this elastic warp of the present. The language that presumes the sky in flux—as more fundamentally processual than static—marks the adjustment of the ecology toward the capitalist morality of flexibility, which has been firming up its strongholds since at least the 1970s.⁷⁰⁸ At this time, a post-structuralist ideology of forming and tearing began making its protracted drift into the economics of flexibilisation and elasticity. As chapter three has argued, this economic logic is secured by the primitivism of the cloud concept, as the “zero degree” of nature, which was coming into view during the same period in the work of writers such as Damisch and his circle of influence, inclusive of Krauss, Deleuze and Guattari. Conceived as the “zero degree” of nature, the cloud concept has no present—it is only the

⁷⁰⁸ Antunes, ‘Freeze-dried flexibility: a new morphology of labour, casualisation and value’, pp.148–9; Mészáros, *The Structural Crisis of Capital* (2010); Antunes, ‘The New Morphology of Labour and its Main Trends: Informalisation, Precarisation, (Im)materiality and Value’, pp.13–30; Antunes, ‘Toyotism and the New Forms of Capital-Accumulation’, p.33.

before (the forming) and the after (the tearing) of properly regulated and ordered natural form.⁷⁰⁹ In line with the work that Rosenberg and Tadiar have done to refresh the critical rejoinder of primitive accumulation, I am drawn to conclude that this temporal-conceptual ontology of clouds emblematises the origin narrative object-ontologies of normative futurity currently guaranteeing the abstraction of life into a virtual domain of speculative capitalist praxis.⁷¹⁰

The Grand Narrative of Global Warming is made up of these object-ontologies, which, as I sought to outline in chapter two, work to abstract the actual dimension of primitive accumulation from its referential bases and forge a new sign made up of ecological form and ecological concept-being. Clouds are ecological concepts where the history of thought that is emphasised in their concept-being has permitted their signifiatory bases to go un-remarked. This is part of a more generalised trend to utilise the ecology, so as to re-route the logic of capital through ecological form, as a mechanism of “purification.” No doubt there are multiple forms that participate in this concept-being of the environment, and clouds cannot be singular instances open to the critical approach of this thesis. I am sure that multiple conceptual histories of the ecology could be unfolded and that intertwined narratives would be revealed. Being so composed, that grand narrative is not simply a fantasy of moralising about “our” planet’s future. It is an origin narrative about the “earth’s” past which looks as if it springs from the world but that actually originates with capital. If the concept-being

⁷⁰⁹ Damisch, *A Theory of /Cloud* (2002); Krauss, ‘The /Cloud/’, pp.155–165.

⁷¹⁰ Rosenberg, ‘The Molecularization of Sexuality’; Tadiar, ‘Life-Times of Disposability within Global Neoliberalism’.

of the ecology originates in social and political forms of appropriation and abjection as this work suggests, then the over-arching narrative of ecological catastrophe or crisis is only ever going to continue to accelerate land appropriation and human dispossession through what might be seen as the conceptual untethering of populations from any kind of linguistic or value-based relationship with the “earth.”

The false collective “we” of this narrative can be located in the appellations of the global discourse of environmental justice politics, as identified by Dipesh Chakrabarty, and repealed by Amiero and de Angelis.⁷¹¹ Clouds, as conceptual forms, partake in this appellation and hence their signifiatory qualities affirm the histories of ostracism, slavery, abjection, expropriation, abstraction and flexibilisation that I have written at length to suggest these forms covertly imply. The “we” that endorses these ideas is the very same “we” whose subscription to the environmentalism of the global North prescribes a dead-end state of emergency to the global South. The idea of clouds as somehow “defying” objecthood plays into the hands of this interpellation of populations into the social death of virtuality. That is, the ideology of clouds as forming forms works to establish a dance between consecrated ontology and imagined “object.” Movement or becoming is inscribed in the conceptual history of clouds. The extended scale of separation that clouds facilitate is hence grounded in the way these forms *appear* to both *give form* and *take form* in dialogue with reciprocally emergent ecological concepts. How inventive to affix ideas to forms whilst

⁷¹¹ Dipesh Chakrabarty, ‘The Climate of History: Four Theses’, *Critical Inquiry*, 35.2 (2009) 197–222; Amiero and de Angelis, ‘Anthropocene: Victims, Narrators and Revolutionaries’ (p.346).

simultaneously lauding those forms as form-as-becoming, or as an infinite aspect of the visual field of the natural world. The forming form will give form to the idea it appears to constitute, in a sort of natural cycle of conceptual refreshment. This ecological spectacle of epistemic renewal continues to drive the undergirding structures of appropriation, abstraction and accumulation. When the concept of clouds is continuously “brought-into-being,” with each forming form, so too is a structure of that which emerges from capital. Lauding an ecological form as an escape from material wealth and its destitute bases does not cease to bring these things into being, but rather drives their manifestation forwards through the linguistic operations of that ecological form.

The “fleeting” quality of clouds equally implies the centrality of the conceptual yardstick of tearing, to this cycle of epistemic renewal. Tearing is the counterpart to forming—though it is disclosed in clouds as if conceptually inseparable. Les Beldo eloquently identifies the role that tearing has to play in the capitalist logic of primitive accumulation, where he states that ecological ‘life is counted upon to *exceed*’.⁷¹² The ecology is counted upon to rupture its conceptual coherence, to rip through its codification. Writing about hog and chicken farming, Beldo responds to the idea that human labour is congealed in the broiler chicken as genetic codification by suggesting that the bird is neither defined by nor limited by its inarguable role as a ‘highly efficient machine’ for converting grain into

⁷¹² Les Beldo, ‘Metabolic Labor: Broiler Chickens and the Exploitation of Vitality’, *Environmental Humanities*, 9:1 (May 2017), 108–128 (p.110).

protein.⁷¹³ The potentially disruptive is instead indispensable to the predictable abstraction of energy from the life of the bird. In this mode of thinking, nature comes to the fore as a machine, built as a set of concepts that are counted upon to shift away from the prior disclosure of their concept-being, counted upon to exceed codification in a predictive and productive way.

This way of understanding accumulation through dispossession reminds me of the passage where Marx suggests that the instruments of capital confer value upon any labour process, whilst losing instrumental worth through the daily wear and tear of use.⁷¹⁴ Instruments exist on a scale of value-conferral, extending from the tool to the machine: a concatenation of maximal durability with a relatively large field of production. The deployment of clouds as a machine for sustaining the global morality of capital extends this scale to an “infinite” aspect. Part of the chaotic instability of clouds, as orgiastic spaces of break and rip, is the implied inability to conceptualise cloud forms, the inability to speak, to contain or quantify through description. While chapter two addressed the cloud concept as machine, chapter one and three both dealt with the idea of clouds as tearing, or as chaotic, unstable, unpredictable forms. Conceived as the rip-in-formation, or as the “zero degree” of forming, a fundamental function of the cloud concept is to rupture at its centre. Clouds are predicted to wear and tear to the point of impoverishing form of its being. The irony of this

⁷¹³ Beldo, ‘Metabolic Labor: Broiler Chickens and the Exploitation of Vitality’. Cf. William Boyd, ‘Making Meat: Science, Technology, and American Poultry Production’, *Technology and Culture* 42:4 (2001) 631–64 (p.634).

⁷¹⁴ Marx, *Capital*, vol. 1, p.268 (pt.4, ch.15).

auto-deconstructing concept-being is the insurance that the concept will be renewed. Destruction is codified as a quality of conceptual coming-into-being. The working concept of clouds hence certifies that these forms infinitely renew the wear and tear that they confer on the spectacle of labour. The acclaimed infinity of clouds fashions these ecological concepts into a concatenation of tearing and forming, through which labour passes in order to abstract the spectacle from all of the dirt and all of the disfigurement.

This thesis has attempted to articulate how a seemingly “natural” concept can be complicit in the disfigurement of humans into disembodied status via processes of capital accumulation by dispossession.⁷¹⁵ I have sought to gather together the historical allusions that are condensed in the working concept of clouds. This is a concept that is brought into play by the industry leaders of cloud computing. From here, I have argued that the cloud concept is a paradigm that extends outwards into the present, across art, media theory and some aspects of eco-criticism. The urgency of remarking upon this paradigmatic status of clouds becomes clear upon moving away from the “given” concept of clouds and interrogating the discontinuous allusions that the cloud concept holds in its history. There have been moments in this thesis that have suggested associations between clouds and forms of social ostracism. I have equally struck upon a relationship between clouds and the idea of a “zero degree,” which has been historically productive within capital. Even the very way that the conceptuality of clouds operates has brought to light a remarkably troubling

⁷¹⁵ Harvey, *The New Imperialism*; Marx, ‘So-Called Primitive Accumulation’, *Capital*, vol. 1.

parallel between clouds as “natural concepts” and the naturalisation of social separatism. For me, the most important facet of this work is encapsulated by Opie’s portrait with which I opened this conclusion. I hope this thesis has challenged its reader to think differently about clouds as metaphors that mediate the social. This should provoke a questioning repose toward what appears to be “natural” in the conceptuality of a “natural phenomenon.” How are we conceptually mapping the ecology in our promises for the future? Whose future does that promise really centre upon? As a broader implication of this work, I hope to have challenged my reader to question what histories of thought might reside beneath the surface of other ecological forms. This work hopes to have excited readers to approach the discourse of global environmental politics from a position of questioning *whose* values are predominant in ecological thought, and *why* those values might preside over others.

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