

Notes From the Anthropocene

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Abstract

Notes from the Anthropocene is an experimental essay film that explores the cultural imagination of the dinosaur as a souvenir for 21st century humans. The icon of the dinosaur shifts between narratives of extinction and human exceptionalism and power. The materiality of the dinosaur whether fossil or plastic toy has, through popular culture, become entrenched in the imaginary of oil extraction and fossil fuel production. *Notes from the Anthropocene* is a speculative iconological look at the dinosaur, and its resurrection in the Anthropocene, the proposed geological era where humans are the dominating force on the planet, and its symbolic relationship to an increasing ambivalence towards the natural world.

For Lulu

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Introduction

This thesis project has changed considerably from my initial proposal, conceived of as an experimental participatory documentary film project that would explore the shifting relationships of children to the dinosaur as it has been constructed through myth, science, and the Western cultural imagination. I set out to enumerate this “imaginary dinosaur” and its role as a vehicle for children to explore ideas of the monstrous. In my interview with early childhood education specialist Susan Hoppenfield, she explained that dinosaur play is about both negotiating power and fear, as well as distinguishing between the real and the imaginary. In collaboration with children, I hoped to mine the symbolic space occupied by the dinosaur, a cultural icon whose extinction narrative has become more relevant, as these narratives become a mainstay in art, science and popular culture.

After many attempts to set up workshops with the Toronto School board, engage in interviews at the Royal Tyrrell Museum of Paleontology in the Alberta Badlands, and participate in a week-long science camp, I was confronted with institutional red-tape, as well as legal concerns, and ultimately started to question my original intent. Despite setbacks—I came to some conclusions I may not have otherwise been privy to, which challenged the frame of my project. While at the Royal Tyrrell Museum, I was able to make a number of important observations:

- 1) First, many of the children in the museum were indifferent to dinosaurs, challenging a narrative inscribed into my project. While this may seem

obvious to some, I had spent so much time thinking of the symbolic position of the dinosaur as a universal fascination for children and had started to romanticize this link. This fundamentally challenged the premise of my workshops, which had taken this fascination for granted, and failed to offer a space for this ambivalence to take place.

- 2) Second, the institutional funding for the museum and educational programs split between the Alberta government and large oil and gas companies such as Shell Oil, ConocoPhillips and ATCO. This corporate underwriting is nothing new to museums, but opened up a number of interesting possible avenues for investigations around the dinosaur's extinction narrative, and the kinds of extinction narratives contemporary culture is contemplating around oil.

In nearly all of the major oil producing regions in the world, dinosaur discoveries are inevitable, and displays, museums and other exhibits (including the animatronic variety) are frequently present. Dinosaurs are often discovered in the Alberta Tar Sands, which helped foster an arrangement between the Royal Tyrrell Museum of Paleontology and surrounding mining companies. In these cases of dinosaur fossil discovery, production is halted until the paleontologists assess and excavate the specimen. While it would be quite natural then for oil companies to underwrite their display as a form of philanthropy, the symbolic connection between the extinction narrative of dinosaurs, and the projected extinction narrative for humans at the site of oil extraction was too powerful to

ignore. It was at this point that my interest in the dinosaur became part of a larger cultural imaginary, bigger than childhood, and full of irony and contradiction. I began thinking of dinosaurs as a pre-historic icon for human beings.

Amidst the educational purview of the museum, were possible ideological echoes of a pro oil industry attempt to both challenge and normalize the effects of carbon on the environment. For example, placards described the ebb and flow of the planet's warming and cooling within the context of dinosaurs. This sentiment is manifested in the following statement mounted near the exit of the Royal Tyrell Museum of Paleontology, "Species come and species go, the only constant on planet earth is change." This idea can be read of course, as part of a discourse of relativism.

Research I had earlier engaged in became resonant as time went on. For example WJT Mitchell argues in his history of the dinosaur icon, that the dinosaur image is a historically specific cultural construction. It is not a universal fixture of childhood but rather one that has emerged in the developed world and is specific to contemporary childhood. Mitchell makes these points:

1. "The principal affect associated with dinosaurs is ambivalence, a shifting complex of admiration and anxiety, identification and otherness..."
2. This affect is not natural or innate, but part of a complex cultural ritual constructed by the whole ensemble of popular media images and pedagogy that influence a child's experience" (Mitchell; 235).

Ambivalence has come to be a highly productive idea for looking at the kind of transitive affect that I associate with oil production and the current crisis of global warming. Ambivalence signifies the ability to hold multiple and contradictory attitudes, feeling or associations. In the case of both oil and dinosaurs there seems to be an oscillation between pleasure and anxiety, identification and otherness. The introduction of the term and proposal for the new geological era the Anthropocene cuts to the quick of a social ambivalence towards a changing relationship to the “natural” world in the current state of continued ecological crises. The idea of the Anthropocene and the rhetoric that surrounds it has provided a critical lens with which to look at the cultural construction of the dinosaur within a post-industrialized Western world.

Finally, I am interested in the role of the filmmaker, or more specifically the, “movie editor bending over a chaos of takes and footage and audio (found and original), and its resemblance to the paleontologist sorting out fragments of fossils to organize the skeletal body” (Smithson, 150). Robert Smithson’s characterization of filmmaking has influenced these ideas. Smithson writes, “everything about movies and movie making is crude. One is transported by this Archeozoic medium into the earliest known geological eras” (Smithson, 150). My arrival at Smithson’s ideas were precipitated by my production experience, sleeping in a small tent, camping in the geologically profound and diverse environments of Joshua Tree, Dinosaur Provincial Park, and Drumheller. These encounters with prehistory and history fostered some internalization of the scope

and profundity of geological time as well as a kind of terror of being in nature, exposed to the elements, producing a kind of ambivalence to my surroundings. My use of the film medium, which Smithson articulates as a “time machine,” suggests that I deal with film allegorically or symbolically as a means of bridging that which is, and once was. I have shot on 16mm, super 8 and digital, each having their own temporal signature and relationship to time.

My MFA thesis has been highly determined by the research process and the production process. In my support document I will provide a summation of my research and thinking around first the dinosaur figuration as a scientific, mythological, and cultural object resurrected as a symbolic force within the Anthropocene. I will outline my thought process on the idea of the Anthropocene; a proposal for a new geological era in which humans have become the dominant force on the planet earth. Though much of this research is not reflected in the film it has been instrumental to my process. In addition I will outline my reflections on the essay film, my approach and influence.

The Dinosaur Figuration

The history of paleontology, especially its earliest development, is rich with anthropomorphism, and misinterpretation. The first recorded dinosaur fossil was discovered in 1676 but was misidentified as a femur from a genus of giant humans, like Nephilim¹ from the bible. It wasn't until two hundred years later that that the bone was reclassified as the femur of a Megalosaurus—the first named

¹ Referred to in biblical texts as giant humans. Nephilim were thought to be children of the sons of god and the daughters of men.

dinosaur. In 1842, the term “Dinosaur” was coined by English paleontologist Richard Owen. The name comes from the Greek words “Deinos” translated into English as fearsome or formidable and “Sauros” meaning lizard. Though the term dinosaur is now understood as technically a misnomer, it has become so cemented through popular culture that the scientific nomenclature has not changed. John Nobel Wilford explains in his book, *The Riddle of the Dinosaur*:

That dinosaur is not strictly speaking a recognized scientific grouping of animals... Since the late nineteenth century, most scientists came to believe that the so-called dinosaurs consisted of two different groups that were rather distantly related. These are the Saurischia “Lizard Hips” and Ornithischia, “bird hips”. As the name suggests saurischians and ornithischians have quite different anatomies and may be no more related to each other than they are to other members of the reptilian family tree, such as crocodiles and pterosaurs. (Wilford, 60)

Science is full of misnomers, mythologies, and metaphors, despite the discipline’s positivist investment in objective truth. This is most apparent in binomial taxonomy in which a scientific specimen is given two Latin or Greek names, the first to describe the genus or species and the second the specific name. The specific name is flexible; it can originate from the name of a person, a location, or an adjective. For instance, *Albertasaurus*, the first dinosaur discovered in Alberta. Its specific name came from the province, which was itself named after Prince Albert.

Henry Fairfield Osborn of the American Museum of Natural History, named the famous *Tyrannosaurus Rex*, a sensational name, translated as King of the Tyrant Lizards. In this name a narrative of absolute power, control,

governance, and domination are present. Scientific naming is a surprisingly anthropocentric endeavour – however the use of Latin or Greek often obscures these metaphorical associations. For instance, the bone of the Megalosaurus found in Oxfordshire, thought to be the bone of a giant human was also the first bone ever named. An illustration of the bone appeared in a scientific magazine in the mid 1700's accompanied by the title "Scrotum Humanum," due likely to the uncanny resemblance of the bone to a pair of human testicles. This was only a metaphorical association and not meant to be taken literally. In 1993 W.A.S Sargeant and L.B Halstead argued that because the name "Scrotum Humanum" follows the rules of Linnaean Taxonomy it therefore has valid bearing as the first name of the dinosaur (Mitchell; 277). Had this been acknowledged, which it was not, Scrotum may have replaced Saurus as the first valid name of the species. The scrotum as both a physical part of the male anatomy, and the symbolic container of masculinity and virility, creates a perfect metaphor for a history in which the dinosaur has variously been represented as a symbol of power.

Prince Albert's commission of the first "scientifically" accurate artistic renderings of dinosaurs was manifest in a life size saurian sculpture garden surrounding the grounds of his project known as the Crystal Palace. Built for the first *World's Fair of the Works of Industry of all Nations*, the Crystal Palace was a display of progress, technology, and global superiority. The dinosaur replicas as companion to the Crystal Palace perfectly fit the colonial imperative. As Mitchell notes, "the Victorian dinosaurs declare the power of the nation-state as deeply

rooted in natural antiquities buried in British Soil. At the same time, the temporal and spatial “reach” of these creatures (back into geological “deep time” and overseas in the global distribution of this world-dominant animal group) makes them apt symbols of imperial sway” (Mitchell, 99). It is as though the British Empire is colonizing time itself through this display.

The sculptor, artist and superintendent of the Crystal Palace Benjamin Waterhouse Hawkins, was asked to conceive of the dinosaur replicas for a new location. Once the exhibition had run its course, the building was relocated from Hyde Park in central London to Sydenham, then on the outskirts of the city. Hawkins collaborated with paleontologist Richard Owen to ensure absolute fidelity of the artworks to then cutting edge developments in Paleontology. Hawkins in his reflections on his process praised the work of Owen, writing in an article for the Journal of the Society of the Arts:

In the writings of Professor Owen I found stores of knowledge from years of labour impressing me still more with the grave importance of attempting to present to the eye of the world at large a representation of the complete and living forms of those beings the minutest portion of whose bones had occupied the study and research of our most profound philosophers by the careful study of their works I prepared myself to make preliminary drawings with careful measurements of the fossil bones in our museum of the college of Surgeons British Museum and the Geological Society; thus prepared I made my sketch models to scale these sketch models I submitted in all instances to Professor Owen who with his great knowledge and profound learning most liberally aided me in every difficulty. (Hawkins; 447)

The majority of the thirty-three replicas were prehistoric dinosaurs or marine reptiles that had been discovered in British soil and named, and thoroughly studied by Professor Owen. Shortly before the Iguanodon was completed, Hawkins invited twenty of the brightest scientists in London to dine inside the mould of the Iguanodon, literally inside the belly of the beast. On New Years Eve paleontologists and geologists allowed themselves to be consumed by the resurrected land reptile, the object of their fascination and symbol of empire. A song was written to celebrate their feat:

A thousand ages underground,
His Skeleton had lain,
But now his body's big and round
And there's life in him again!

His bones like Adam's wrapped in clay
His ribs of Iron stout,
Where is the brute alive today
That dares to turn him out.

Beneath his hide he's got inside
The souls of living men,
Who dare our Saurian now deride
With life in him again?

The Jolly old beast
is not deceased
There's life in him again!
(Mitchell, 97)

The song illustrates a sincere identification with the dinosaur. A figure that may have consumed humans is now the site of their consumption. The resurrection of the dinosaur affirms the life within it, the mastery of the humans that brought it

back. The “scientifically accurate” dinosaur sculpture represents the dinosaur as an object of desire that in its resurrection affirms the authority of science, technology, industry, imperialism, and art. Donna Haraway in her lecture, *Birth of the Kennel*, speaks to the idea of a figuration. She explains that, “figures are about collective yearning. Figurations somehow collect up and give back the sense of the possibility of fulfillment, the possibility of damnation, or the possibility of a collective inclusion in figures larger than that to which they explicitly refer.” (Haraway, 2) The dinosaur is such a figure, its promise delivers more than a particular genus could and the desires that shape this figuration are constantly transforming.

One hundred and ten years after the construction of the Crystal Palace dinosaurs, a set of gigantic dinosaur sculptures float down the Hudson River. The dinosaurs crane their necks to absorb the view of the New York City skyline. They are headed to the New York World’s Fair for the Sinclair Oil Company’s exhibition, *Dino Land* a “realistic and authentic re-creation of life-size dinosaurs and the prehistoric world in which they lived.” (Sinclair, 1) The literature of the time stresses the authenticity and scientific accuracy of the Sinclair dinosaur exhibit, a large scale branding effort. This exhibition was the culmination of thirty years of success using the dinosaur logo.

In the 1930’s, while Sinclair Oil was working on their advertising campaign, marketers established their message: Sinclair crudes are millions of years old – the older the crudes the higher the quality. They proposed the

dinosaur as a symbol to dramatize the age of the crudes. A series of advertisements were released in the 1930's featuring a range of dinosaurs. The public responded best to the "peace-loving" *Brontosaurus*² as opposed to the terrifying *Tyrannosaurus Rex*. On their website the company describes their branding success:

Industrial surveys repeatedly rank the Sinclair dinosaur as one of the most potent symbols of American business. Remarkably high percentages identify the dinosaur with Sinclair. This association is positive and pleasant. There is almost no confusion between Sinclair's Dino and other corporate trademarks. Marketing experts agree that the dinosaur is a "powerfully unifying and associating concept." The connotation penetrates deeply. Children are as fascinated with the pre-historic uniqueness of the dinosaurs as are adults and the correlation with Sinclair therefore begins at an early age.

The Sinclair Oil Facebook page invites visitors to share their favorite Sinclair memory. The page is a repository for nostalgia surrounding the exhibitions, paraphernalia, and collector's items. This could be read as tied to a naïve nostalgia for a time when oil was domestic, an all American product mellowed alongside the dinosaurs, whose bones stake claim to the land and American national identity.

The Sinclair souvenir "Dino", which was manufactured on site at the New York's World Fair from a plastic souvenir-reproducing machine, also creates a relic for an impossible experience, a pre-historic experience. Susan Stewart in her book, *On Longing*, writes, "through narrative the souvenir substitutes a

² Brontosaurus is now a *Nomen Oblitum* and the correct term is *Apatosaurus*. I use the obsolete term *Brontosaurus* only because it was the name used by Sinclair at the height of the brand's potency.

context of perpetual consumption for its context of origin” (Stewart;135). The context of origin in the case of “Dino” the company logo is already one of consumption, as the souvenir is a small memento for an experience constructed by an oil company to improve sales and brand recognition. On the one hand “Dino” the souvenir is a stand in for the experience of Dino Land, and on the other it aims to be a souvenir for an impossible context of origin—a prehistoric landscape. This impossible experience is branded as an authentic reconstruction.

Harry Sinclair, the oil tycoon and founder of the Sinclair Refining Company was a shrewd businessman. His dinosaurs were not constructed solely as novelty sculptures. Similar to Hawkins who was rigorous in his pursuit of the scientific accuracy of his dinosaur sculptures, Sinclair sought scientific legitimacy by aligning himself with the American Museum of Natural History and their scientists. He enlisted cutting edge paleontologists, Dr. Barnum Brown and Dr. John H. Ostrom to consult on the logo, stamp books, toys, souvenirs and of course the main attractions, the dioramas for the *New York World’s Fair* in 1964-5³. Sinclair funded research expeditions and endorsed the American Museum of Natural History as part of his advertising campaigns. He billed his logo and dioramas as authentic and scientifically accurate. In reality the dinosaurs of *Dino Land* erected next to each other and arranged in a neat and orderly manicured diagram represents an immense compression of time. The two most famous

3 In 1933 for the Chicago World Fair, *Century of Progress*, Sinclair had funded a smaller scale dinosaur diorama. This is where Harry Sinclair and Barnum Brown first met.

dinosaurs of the modern era were *Brontosaurus* and *Tyrannosaurus Rex*. *Brontosaurus* lived approximately 154 – 150 million years ago where as the *Tyrannosaurus Rex* lived only 67 to 66 million years ago, in essence humans are closer in time to the *T. Rex* than the *Brontosaurus* ever was. This deliberate collapse of time runs parallel to the world of the miniature, “clearly limited in space but frozen and thereby both particularized and generalized in time – particularized in that the miniature concentrates upon the single instance and not upon the abstract rule, but generalized in that the instance comes to transcend to stand for a spectrum of other instances” (Stewart, 48). This undifferentiated time in the case of the diorama gestures back to the simple idea behind their marketing campaign. Sinclair crudes are as old as these ancient and wondrous creatures, all of them. The deep past becomes synonymous with quality. The exact age however, is an abstraction; hundreds of millions and tens of millions are reduced to the same square footage. The “Dino” souvenir is a reminder of a prehistory and its connection to the present moment as that which fuels it.

The function of looking back at the “Dino” souvenir now can be seen in relation to Stewart’s expanded idea of the souvenir as it speaks to:

a context of origin through a language of longing, for it is not an object arising out of need or use value; it is an object arising out of the necessarily insatiable demands of nostalgia. The souvenir reaches only “behind,” spiraling in a continually inward movement rather than outward toward the future”. (Stewart,135)

Sinclair’s “Dino” stands in as an object of nostalgia for a time when oil came from American soil, “mellowed” in the earth next to America’s longest residents.

The dinosaur souvenir's original context represents nostalgia for American nationhood and provenance. Ironically though, the dinosaur is also often equated with the obsolete, in the form of the souvenir it becomes a *denial* of entropy and obsolescence.

The dinosaur has been instrumentalized by imperialism and post-modern late capitalism as a trophy of industry. The human encounter with the dinosaur display, whether physically reduced or enlarged, is an encounter with the miniature because of a necessary and rational distance. Its context of origin is replaced by the confines of the truck stop, the architecture of the museum, or the mall, which in essence become vitrines, spaces of containment.⁴ The diorama, through "life-sized" replication, evokes a contradiction, the display contains both a utopian promise and a grotesque view. The disproportionate scale of the sculptures cannot be supported by their temporary surroundings, the landscape cowers below the dinosaur. There is no "wild"—only containment, the disproportionate surroundings create a grotesque scene. As with the souvenir, the diorama is perpetually looking back to some indeterminate time. Any gesture towards the future is contained in a vague utopian promise delivered by "titans of industry".

The dinosaur body in the diorama becomes a symbol that is always reflecting a deep past, while evading the question of a dynamic or specific future.

⁴ This idea comes from Susan Stewarts. She posits that the freak show is a miniaturization rather than a display of the grotesque. The abnormal body only delimits the normal. The body in relation to display is caught in stasis rather than a sense of the expansive. (132)

This inward movement inherent to the dinosaur souvenir evades the question of the impact of industry. The dinosaur is the perfect emblem of an age that is out of synch with geological and biological time. This new temporality is informed by industry, capitalism, and a new paradigm of the management of the “natural” world rather than its conservation.

Welcome to the Anthropocene

Someone once said that it is easier to imagine the end of the world than to imagine the end of capitalism. We can now revise that and witness the attempt to imagine capitalism by way of imagining the end of the world (Jameson).

— Fredric Jameson

Since the industrial revolution, technological development has progressed at exponential rates. Consumption and production necessitates this rapid acceleration. With the proposition of a new geological period called “The Anthropocene,” it is imperative to trace a shift in temporality both as it pertains to the proposition and the predicament of a post peak oil world. The Anthropocene is a proposed geological time period, popularized by the chemist Paul Crutzen and characterized by the impact of human created technology and industry on the planet. Replacing the Holocene the Anthropocene acknowledges that humans are the driving force behind massive changes in the biosphere. The start date of this new geological era is being located around the beginning of the industrial revolution.

The development of engineering in the 19th century as the site of interaction between science, economics, manufacturing processes,

industrialization, and urbanization is inextricably linked to the development of and adherence to a modern concept of time. According to Mary Ann Doane,

the acceleration of events specific to city life was inseparable from the effects of new technologies and a machine culture made possible by developments in modern science. In the realm of physics and beyond, the refinement of the second law of thermodynamics (the law of entropy) engendered a conceptualization of time as the tightness of a direction, an inexorable and irreversible linearity. In the late nineteenth and early twentieth century, time became increasingly reified, standardized, stabilized and rationalized (Doane, 4).

Doane interestingly points out that towards the end of the industrial revolution, an unprecedented period of population and economic growth, the second law of thermodynamics, entropy, and its scientific formulation defined and verified the concept of a limit, of finitude on an atomic scale (Doane, 5). The understanding of time as unidirectional, and its standardization streamlining the efficiency of human labor and the mechanized production of goods, is tied historically and conceptually to the understanding of entropy: the degree of energy dissipation (Tiezzi, 19). In 1850 Clausius coined the term entropy and explained “the second law of thermodynamics in a wider and more universal framework: The entropy of the world tends towards a maximum. Maximum entropy, which corresponds to the state of equilibrium of a system, is a state in which the energy is completely degraded and can no longer produce work” (Tiezzi, 6).

The identification of an inevitable physical and scientifically proven limit to all growth emerges early in the development of capitalism. In fact, it was Clausius who originally uttered the now commonly accepted statement, “infinite growth

cannot exist on a finite planet” (Tiezzi, 193). Presently this understanding has lead to dialogue at a critical moment where conventional sources of oil production are peaking and first world dependence on oil and non-renewable energy sources show no sign of deceleration⁵. More insidious than earlier precedents of capitalism, the cultural paradigm of late capitalism produces consumers acclimatized to excess and deeply enmeshed cycles of consumption and waste. The logic of infinite growth is apparent in the profusion of disposable designs and built-in obsolescence. Products are bought only to be discarded after a single use or are replaced by the much-coveted upgrade. It is particularly interesting that the denial of entropy here has become inured by a near constant confrontation with waste. On the other hand the symbiotic relationship between waste and comfort creates the potential for a cycle of solutions that do not disrupt lifestyle comforts high in entropy. Though these solutions, such as geoengineering experiments that aim to intervene into ecosystems to create a global cooling effect, may temporarily mitigate the effects of waste cycles, they risk becoming the cause for yet another shortsighted solution. We find a regressive loop begins to form in which the solution becomes the problem. A veritable global pharmakon appears on the horizon. This quandary is rife with market potential; as solutions to issues of scarcity with side effects of scarcity, is a recipe for an industry in which entropy becomes a commodity.

In opposition to modern conceptions of time, namely economic time

⁵ There is a steady increase in extreme oil extraction as the demand for oil and consumption show no signs of deceleration.

(defined as a conception of time denying the second law of thermodynamics and its corresponding temporality, entropic time) or technological time (defined as a concept of time which increases development exponentially and through increasingly complex systems that are never solely within the control of the creator, engineer, or scientist) Italian scientist Enzo Tiezzi champions a radical consideration for what he calls biological time. Economic and technological time, Tiezzi argues, are out of synch with biological time, a theory of time understood as a forward flowing irreversible movement from past to future with ever increasing entropy, because they are incommensurate with entropic time, and thus fail to account for the entropic processes equated with waste, pollution, energy crisis, and ultimately the disintegration of the environment (Tiezzi, 24).

Tiezzi writes:

Progress is measured by speed of production and it has even been suggested that the faster we use up nature's resources, the greater the advance of progress. In other words, the faster we transform, the more time we save. This technological or economic concept of time is exactly the opposite to entropic time. Nature obeys different laws to economics, it works in 'entropic' time: the faster we consume natural resources and the energy available in the world, the less time is left for our survival. Technological time is inversely proportional to entropic time, economic time is inversely proportional to biological time. Money time and clock time are not the scales on which a correct relationship with nature can be established." (Tiezzi, 28)

Money time and clock time, the economic and technological, have so altered the conditions of the planet that a new epoch enumerating the temporal placement of our present condition on the geological time scale has been introduced. It is the delineation of this new geological era, rallying the convergence of science and

business to engineer a future in which global warming will no longer threaten the species or the proliferation of a late capitalist paradigm.

In the year 2000, Nobel Prize winning atmospheric chemist Paul Crutzen, struck by the immense impact of humans and technology on the biosphere, decided that we are no longer living in the geological epoch known as the Holocene (The Economist). This realization did not lead to a millennial demarcation of a new geological period. Crutzen retroactively situates the discovery based on air containing carbon and methane trapped in polar ice, marking the inception of the Anthropocene in 1784, the same year the steam engine was designed at the beginning of the industrial revolution (Crutzen, 23). Human impact is characterized as the leading ecological force in the age of the Anthropocene, suggesting a rupture from the past 300 years of scientific inquiry that has placed humans on the periphery of complex and dynamic systems. The identification of the Anthropocene, ecologist Simon Lewis notes, suggests both recognizing this fact and resisting its consequences (Crutzen, 23). These conceptual paradigm shifts, imply a returning of humans to the proverbial center of the universe, as the pinnacle and primary force orchestrating solar, geological, and temporal transformations.

Technological change is exponentially faster than natural evolution, and what develops over thousands of years in the natural world can be engineered to take place overnight. Concomitantly, scientific inquiry and understanding and the ability to adjust culturally is slower than technological development (Tiezzi; 7).

Writing about the Anthropocene Slavoj Žižek extols the countervailing forces that imbricate 'nature' within a socio-historical category:

The limitation of our freedom that becomes palpable with global warming is the paradoxical outcome of the very exponential growth of our freedom and power, that is, of our growing ability to transform nature around us, up to and including destabilizing the very framework for life. "Nature" thereby literally becomes a socio-historical category... [w]hat is thereby undermined is the basic distinction between nature and human history, according to which nature blindly follows its course, and just has to be explained, while human history has to be understood- and even if its global course is out of control, functioning as a fate going against the wishes of most people this "fate" is a result of the complex interaction of many individual and collective projects and acts, based upon certain understandings of what our world is. In short in history, we confront the result of our own endeavors. (Žižek, 333)

The Anthropocene, already 228 years old, is only a blink in the geological time scale of the earth. Bracketing this era as shaped by humanity and technological development, cements the "perpetual now" modality of postmodern culture and further situates humanity within a sense of technological time tied to exponential growth. Žižek's proposal that nature can now be seen as a phenomenon to be explained rather than understood, may be a fruitful way to subvert the current rhetoric of technological time, which justifies the same system of human intervention that has led to the current crisis, which rationalizes the deployment of uncertain large-scale geoengineering experiments. In this sense, the terms "Anthropocene" and "geoengineering" may be seen as nodal concepts in an ideological continuum moving towards unprecedented intervention into the Earth's ecology, seeking to use technology to overcome or exceed biological time and therefore bypass entropy as a natural law.

Within an economic and technological time frame, these experiments are

a solution offered to offset cultural lifestyles based on the speculated possibility of infinite resources. The inaugural event of the Rio+20, the United Nations Convention for Sustainable Development that convened in the summer of 2012, began with a two and a half minute animated video. In it, the soothing voice of an android-voiced British woman traces the trajectory of the Anthropocene while a computer-generated birds-eye view of the earth moves towards the screen, rotating and mesmerizing an international audience. As iridescent lights explode into a global web, the coordinates of a graph appear and a thin line accelerates up and across the screen illustrating the growth of populations, energy, and carbon dioxide through time. The imagery and the graph are an echo of the narration: “relentless pressure on our planet risks unprecedented destabilization, but our creativity, energy and industry offer hope.”⁶ The message is clear: salvation is to be found in industry, through technology and economy. Exponential development is the key to solving problems proliferating from exponential growth, the problem stems from the inevitable confrontation with entropy and the proposed solutions promise to bypass.

One of the major themes of the Rio+20 convention was the green economy and poverty eradication—two goals that are curiously intertwined). In Raymond Cléménçon’s analysis of the UN outcome document (titled, “The Future We Want”) he notes that there was an, “ideological battle concerning the role that the private and public sectors and the free market economy should play

⁶ Welcome to the Anthropocene may be viewed here: <http://vimeo.com/39048998>

in advancing sustainable development. The free-market ideology that sees a limited role for government intervention—strongly advocated by the United States—largely won out. There was very little debate of the global fiscal crisis and the factors that led to it, nor an attempt to learn from the failure of liberalization policies to benefit all countries and to understand what it could mean for sustainable development strategies” (Clémentçon; 312). Critics found that the green economy positions largely overlooked the issue of entropy, or finitude and were invested rather in solutions with minimal impact on industry and the free market economy. Consortiums of technoscientists, entrepreneurs, governments, and multinational industry with a disproportionate amount of power are those who tend to champion geoengineering research.

According to David Keith, it was Paul Crutzen, the chemist responsible for the currency of the concept of the Anthropocene, who also popularized geo-engineering with his groundbreaking paper on Solar Radiation Management (SRM) the same year he was featured among Time Magazine’s 45 “Heroes of the Environment.” Painted as an outspoken figure addressing climate change and a leader in presenting research data that runs counter to the interests of government and industry, he was praised as a “scientist’s scientist,” always ahead of the curve (Hansen). Crutzen’s SRM research looks at the mitigation of global warming by injecting sunlight reflecting particles of sulphur into the stratosphere via hot air balloons and heavy artillery (Crutzen, 2006). Crutzen speaks to the dire situation the planet faces as climate change intensifies. Both

Keith and Crutzen point to the deployment of SRM technologies as quick and cheap solutions, albeit not ideal. Foremost as a solution is the reduction of green house gas emissions, however, they are worried that these reductions are not happening at a substantial or effective rate. In their respective research and public appearances, they call for more funding for research, development and policy analysis towards the creation of international regulatory bodies that will oversee and manage the complicated landscape of geoengineering.

While Keith charts the inertia to reduce green house gas emissions in his 2007 Ted Talk, he fails to mention the entrepreneurial potential associated with offsets (Keith; Ted Talk, 2007). His more recent side venture is the company, *Carbon Engineering*, invested in the industrial-scale capture of carbon from ambient air; Keith is both a scientist and an entrepreneur. Under the 'vision' heading of his website the company's goals are outlined as follows: "CE's air capture process will provide a critical tool to manage carbon emissions and climate risk, and will capitalize on an expanding emissions management market space."⁷ Here we might visualize how geoengineering, as an industry (representative of the reification of the environmentalist movement) might finally enable a massive response to global warming, based on its capacity to generate enormous profit for private industry and lobby government officials for the opportunity to do so. Bill Gates and other technology magnates are part of a roster of corporate interest groups alongside previous climate change deniers,

⁷ The company has changed the wording since I first visited their website in 2012.

invested in diverse geoengineering research projects (ETC Group).

The emissions management market place is based on a model of cap and trade within a paradigm of “green capitalism”⁸ or alternately “green economy”⁹ in which carbon capture is sold and traded to industry responsible for emitting carbon as a way to enable them to maintain permits to emit carbon. In essence the system to date works as a tax with incentives to reduce emissions and fiscal penalties associated with overproduction (Frank, 2009). Potentially, geoengineering projects like carbon capture could be reduced to the logic of late capitalism in which the imminent threat is leveraged to impose legislation that creates conditions for the commodification of ‘solutions,’ with markets established to turn a profit.¹⁰ This creates only a short-term fix that enables energy producing greenhouse gas emitting industry to continue without facing alterations in production or consumption. In this configuration of capitalist time, time is money, and carbon capture buys time. In the case of geoengineering, there is no clear-cut commodifiable product, however these interventions are far cheaper than the proposed restrictions to greenhouse gas emissions. Zizek wonders whether, “the forthcoming ecological crisis, far from undermining capitalism, will serve as its greatest boost?” (Zizek, 329).

8 Green capitalism entails the commodification of environmental resources, management and environmentally friendly ‘solutions’. The development of an emissions market, where permits for the emission of green house gases and offsets are regulated through a market is a prime example.

9 The use of the term green economy is frequent within climate change documents, however, it is unclear how this differs from green capitalism which operates through the logic of offsetting and permit regulation within a market.

10 The commodification of imminent threat or disaster is discussed in detail by Naomi Klein in, “The Shock Doctrine.” Her thesis vilifies a global capitalist system that exploits the unstable conditions of disasters to implement new laws and legislature favorable to capitalist expansion.

The safety and security question of the population on a planet in a state of precarity intercedes with the notion of geoengineering in a quandary economists describe as a ‘moral hazard.’ David Keith elaborates, “knowledge that geoengineering is possible makes climate impacts look less fearsome and that makes a weaker commitment to cutting emissions today” (Keith, 2007).¹¹ Complicating this moral hazard is the circulation and proliferation of apocalyptic scenarios, highlighting the security and risk to populations from impending large-scale ecological disasters. Paul Crutzen regularly refers to his SRM technologies as a “last resort” that we should seriously consider now (Goodall, 2011).

To synthesize these disparate facts is to confront ambivalence towards the irreversible facts of human impact on the biosphere, and the immeasurable and potentially devastating consequences of attempting to rectify them. If geoengineering is reconciled with a concept of entropic time, and not the result of the gnat’s-attention span of late capitalist market driven economy, it appears at least plausible to anticipate positive outcomes. What rings as most hazardous is the potential feedback loop running between diagnosis and treatment—in which geoengineering creates new problems, resulting in new solutions *ad infinitum*.¹² The presented solution is unsettling at best, the ‘cure’ is simultaneously poison. But it’s clear that to suggest a return to a conception of nature outside of human history is a naïve and utopian proposal. Rather, one can imagine a productive

11 “A surprising idea for “solving” climate change”

12 Here we can see that even this example of the problem of geoengineering operates in the logic of a late capitalist paradigm – the notion of infinite time and resources on a finite planet.

incorporation of the Anthropocene as a conceptually generative space to imagine a paradigm shift, where the threat of ecological disaster, instead of becoming a boon for capitalism, lays the foundation for a critique of a green economy or green capitalism that shields its eyes to a future with entropy emanating from its core.

Dinosaurs in the Anthropocene

Defined as a new discrete time period, the Anthropocene's beginnings coincide with the industrial revolution, the development of the energy industry, and the growth of population and production. This boom in the energy industry and economy made its mark in the form of carbon traces found in ice caps, attributed to the year 1786.

Used to fuel the steam engine, coal was the central fossil fuel of the industrial revolution. At the same time, the nascent discipline of paleontology emerged. Coal mining has frequently turned up fossils, though dinosaur bones and coal are in no way causally linked, belonging to discrete geological time periods. The first traces of carbon in the earth's records appear in the 1760's around the same time *Scrotum Humanum*, the first dinosaur bone, was described. The link between dinosaurs and fossil fuel remain tangentially linked through adjacencies in chronologies and an abundance of metaphorical associations.

In Greek mythology the Griffon, half bird, half lion prevented thieves from accessing gold in the mountains. In *The First Fossil Hunters* Adrienne Mayor, in forensic detail, traces the mythology of the Griffon to the fossilized remains found by nomads of what is now classified as a protoceratops, a ceratopsian dinosaur. The mythology stemmed from the discovery of fully articulated fossil remains in close proximity to gold and other valuable geological treasures (Mayor, 45). Dragons are another mythological creature known for protecting treasure. As WJT Mitchell explains:

dragons were the guardians of buried treasure; dinosaurs are associated with that quintessential modern form of buried treasure, fossil fuels... More generally, the dinosaur is a recurrent metaphor for the cycle of innovation and obsolescence that is central to the logic of both modern science and technology and modern capitalism (Mitchell, 88).

The branding of Brontosaurus for Sinclair's mellowed crudes makes perfect sense in this light.

In using the Brontosaurus as the Sinclair trademark, customers are confronted with a domesticated non-threatening dinosaur. Though Sinclair drew on the terrible T-Rex and other dinosaurs, the "Dino" icon in the shape of Brontosaurus was always the least threatening. This domestication speaks to a larger idea of the triumph of science and technology over death (Mitchell, 88). Sinclair propagated the idea that their gasoline products were part of a paleontological aging process. The oil itself was not of dinosaurs, though it potentially "mellowed" alongside them. With every gas purchase customers

received free dinosaur toys, souvenirs, stamp books, etc. This paraphenalia was designed with the help of paleontologists.

The discovery of a massive dinosaur graveyard by the famed “bone hunter” Barnum Brown was the inspiration for a well known sequence in the popular animated Walt Disney film, *Fantasia*, released at the height of the age of the automobile. The sequence set to Stravinski is a slow extinction sequence in which thirsty dinosaurs emerge only to fall to their death in a barren wasteland. Their bodies and bones disintegrate and churn in the mud until viscous material bubbles over transforming into a vast oil deposit (Mitchell, 167).

Barnum Brown worked closely with Sinclair consulting on the dino brand. According to Mitchell, Brown was a key figure in the, “three-way relationship of big capital, mass culture and big bones in the modern era” (Mitchell, 168). He carried out, continues Mitchell, “the program of making the dinosaur the marquee attraction in the modern natural history museum and disseminating it beyond the museum as a staple of popular culture” (Mitchell, 168). This trifecta that Mitchell speaks to could be described as the paleo-industrial complex, in which the energy industry filters money into natural history museums and the image of geological remnants such as dinosaurs or other fossil objects are used to naturalize their products. Think Shell Oil.

The connection of the dinosaur to fossil fuel projects is far more implicit than in the days of Sinclair,¹³ and yet the association persists. In a grant proposal for the 2010 Alberta Pride Alto Award bestowed upon tourist destinations in the province, the Royal Tyrrell Museum of Paleontology summed up this continued association between the energy industry and the natural history museum. Under the “objectives” heading in their grant application it is stated,

The Royal Tyrrell Museum is the essence of Alberta. To visit is to witness Alberta’s geological history—ancient palaeontological treasures that gave rise to today’s oil and gas riches. This facility encompasses the Alberta spirit—innovative, resilient and risk taking. The museum was created in order to infuse new life into a once thriving coal-mining town, by capitalizing on the unique setting and resources of the Canadian Badlands. Today this rural facility, located nearly two hours from a major centre, welcomes almost 400,000 visitors annually.

Spending time in the museum one can’t help but notice evidence of major funding from energy companies with major stakes in the tar sands. Donor plaques are distributed through the museum marking out funding for children’s educational programs, learning centres, and entire sections of the museum. I do not wish to imply that the entire field of paleontology is in bed with large-scale energy corporations. However, it does appear that large institutions like museums are sites of this interaction. The field of paleontology is not restricted to dinosaurs, and according to Clive Coy¹⁴ contemporary paleontology takes an integrative approach in which the biodiversity of a time is more important than specific specimens. Rather than a science that was once preoccupied with

13 There are still Sinclair gas stations in the US. The company was bought out by ARCO in 1969. Most of its gas stations in the Eastern states were sold to BP.

14 Clive Coy is one of the paleontologists featured excavating a bone bed in the beginning of *Notes from the Anthropocene*.

ancient “monsters,” this newer approach is equally fascinated by the many animals that coexisted, and the flora fauna and biospheres that supported these life forms. Despite trends in the field, the museum relies upon spectacles of terror and wonder to draw numbers to their remote location. Fiberglass Albertasaurus sculptures lean forward with menacing grins as synthetic roars greet tourists at the mouth of the museum. Classical music envelops the assembled Tyrannosaurus fossil in a darkened room with the exhibition title *Lords of the Land* next to vitrines of velociraptors in an extended backward bend, their flexibility is recontextualized by a didactic panel that reads *Death Pose*. The museum experience weaves between the scientific, the mythic, and spectacle. Narratives of extinction and resurrection permeate throughout.

Displays of “Alberta’s riches” and the reanimation of dinosaurs found alongside coal and in the tar sands, can be read as anti-extinction narratives. These displays enact a kind of denial of entropy, and proof of scientific and technological intervention to resurrect the lost world. The resurrection of animals from fossilized remains speaks to a kind of temporary (albeit longterm) evasion of entropy. Unlike the biomass that is transformed into coal or oil through specific geological conditions, intensive time, and elaborate processes, the fossil retains its form and key information to its particular make up and the time from which it came. Whereas fossil fuels like oil and coal are undeniably the result of entropy, the resurrection of fossilized animals can be read as symbols of survival.

The Essay Film: Approach and Influences

While my research opened up new areas of investigation and shifted the focus of my project, I maintained a consistent interest in making an essay film. The simultaneous research, production and collecting necessitated a form that would accommodate a textural and multi-valent approach, one that could evolve and take shape over time. Paul Arthur elaborates on this, writing:

Essays are distinctly process-oriented; they are rhetorical journeys in which neither an exact route nor final destination are completely spelled out. ... the essay ... assumes that what it tells us and the order in which it is communicated could have taken an entirely different route, that it is one of several possible versions of the same concept. It delights in quirky arcs of logic, sudden digressions, unexpected epiphanies, pauses for self-reflection” (Arthur, 60).

While this sense of potentiality can be overwhelming, it is also liberating, allowing for ideas to unfold through unexpected detours. I found that carving out space for examining concepts from unexpected vantage points could help in synthesizing contradiction, ambivalence, and further navigating aporias of an idea. Arthur similarly articulates this sense of contrapuntal inflection, writing:

essays tend to blend several clashing time frames that layer what we think of as literary “tenses”... As with literary essays, essay films may segue between separate styles, tones, or modes of address. In doing so, they fracture epistemological unities of time and place (Arthur, 59).

In other words, the form itself calls for a break with dominant narratives and lends itself perfectly to a film that attempts to tease out master narratives of imperial and capitalist mythologies embedded within the icon of the dinosaur. In this sense, I identify strongly with the etymological origins of the word “essay,” and its roots in the French word “essai,” for attempt, or try.

The flexibility of the essay genre allows for a vast number of approaches that can be employed to weave the film together. This elasticity creates space for films to deploy a multi-nodal form of address. One model that I drew upon consistently was Deborah Stratman's *O'er the Land*, a film which eschews traditional voice over in favor of a visual mode of address. *O'er the Land* is a rumination on performed masculinity and nationalism in present day American society. Stratman's camera is consistently positioned on the side-lines at the sites where rites of masculinity are performed, such as a football game, a gun trade show, and a civil war re-enactment. By framing her film through various oblique and askew perspectives, Stratman captures ruptures, pointing to contradictions behind these rituals. The liminal space between the image and the social context the audience brings to these familiar events creates space for an unexpected vulnerability to transcend the perception of rote identities and traditions.

Perhaps most relevant to my work is Stratman's use of a nodal structure. This is enacted by producing disparate vignettes which are united and sometimes interrupted by unexpected perspectives. This work became influential in several ways. First in the search for epiphenomena which at first glance appears tangential to the essay question but provides an unexpected inroad. Second, nodal structures provided a reference point as I collected various images, footage, audio, and micronarratives that gestured towards the dinosaur in relation to the anthropocene.

The space within this genre to draw from multiple vocalities emboldened me to experiment with a voice over moving from the speculative, to the poetic to the interrogative. Despite the variation in content I was interested in a voice that would feel intimate as though these historical narratives are crossing personal spatial boundaries. The association with dinosaurs for those who did not grow up during the reign of Sinclair Refining Company is subterranean. It's an association that exists but one that is insidious and plays in the background. I endeavored to create a tone in the voice that would speak to the subconscious space in which the dinosaur imaginary is deeply rooted. In addition the soundtrack is populated with voices found in newsreel footage, educational videos and historical documents. At one point during the Sinclair segment of the film, the voice, the text ,and the authoritative Sinclair "tour guide" voice come into close proximity. It was important at this point in the film, the golden age of capitalism, to work with excess—to gnaw at the attention of the audience. This approach was inspired by Matt Wolf's 2012 essay film, *I remember: A Film About Joe Brainard*. which features a voice reciting a poem, written and spoken by the subject of the film. As his poetry establishes the film's pulse, another voice is introduced, with audio levels swinging up and down to accommodate the shifts between them. This effect oscillates between harmony and dissonance. Multi-vocal layering creates a dialectical relationship in which the introduction of multiple voices creates space for the audience to synthesize. The audience become active agents in navigating modes of address.

Many of the essay films that have impacted the sensibility of *Notes From the Anthropocene* are personal narratives, though it is not a personal film. Penny Lane's *The Voyagers* (2010) and Jay Rosenblatt's *The Smell of Burning Ants* both draw on found material to tell deeply personal stories that gesture towards shared experience. In the case of Rosenblatt's film, footage is culled from a plethora of sources and becomes a canvas on which to illustrate the deeply alienating realities of a child's masculinity. In *The Voyagers*, Penny Lane creates what she calls a valentine mix tape combining found and original footage. She draws upon the public history of the Golden Records and the private love life of Carl Sagan, tying them to her own story of taking the ultimate leap of faith—falling in love.

Both films ingest images that are part of a larger cultural imaginary and reinscribe in them a personal narrative. Su Friedrich takes a similar approach in *Sink or Swim* (1990) in which her coming of age story and troubled relationship to her father is recounted in the voice of a child recited as an abecederia over black and white images that move from the banality of the everyday to the extraordinary, from quiet moments captured on the street to circus performers and body builders. Though she plays with bricolage and footage that reads as archival, much of it she filmed in black and white over several years. These films create an intimacy and intensity through a dialectical relationship between personal stories and public archive. The contextual original association is

cracked open and gives way to the particular narrative of the film author but also in its recontextualization a space for reinterpretation opens up.

As Catherine Russell writes, “archival filmmaking promotes a schizophrenic dispersal of discourse of mastery, authenticity, and authority through fragmentation, cutting up and interruption” (Russell, 243). These collage films, though rooted in an archival aesthetic, interrupt and subvert master narratives through the insertion of an idea and personal story that is not germane to the grand narratives that typify the original source and intent of the material. Inspired by deeply personal essay films, I set out to make a film that did not construct a personal narrative, but engaged with an archive of images that exist in the popular imaginary through allegory.

According to Judith Butler, “allegory is, in its most general formulation, a way of giving a narrative form to something which cannot be directly narrativized” (Missen, 29). The development of the dinosaur icon from the Victorian era, a symbol of imperialism through the golden age of capitalism to the present moment, is buried deep in our subconscious as both an emblem of extinction and resurrection. This is an allegory for the trajectory of the anthropocene. The speculative narrator turns the inward gaze of the dinosaur sculpture and souvenir outward towards a deep future, reconfiguring the possible gaze of the dinosaur. The speculative turn in the film lends itself to the archival impulse. As Russell points out:

Often including apocalyptic scenarios of crisis and destruction, found-footage filmmaking tends towards an “end of history.” The techniques of

appropriation, recycling, and re-presentation place the status of the past, the history of the referent, in question. As the aura of the filmmaker's "having been there" is eclipsed, the media-scape of found footage renders history itself as "lost." But what kind of history is it that is lost if found footage filmmaking is also about a re-invention of memory as cultural representation and imagination? The appropriated image points back to the profilmic past as if it were a parallel universe of "science fiction." (Russell, 241).

This quote resonates with sections in *Notes from the Anthropocene* which involve rephotographed CGI animated dinosaur "documentaries." These animated films use visual effects to create a "realistic" rendering of the dinosaur and borrow cutting edge paleontological research to resurrect a lost world. Just as the Crystal Palace dinosaurs and Sinclair's World Fair attractions are constructed as authentic, they are steeped in heroic narratives of power, dominion, extinction and finally resurrection for the edification of the masses in the form of edutainment. It is in these documentaries that the dinosaur is again resurrected as a an object of science and popular culture. Rephotographing these films in black and white 16mm hand processed film constructs a kind of science-fiction-like proposition that the footage has a real legitimacy, that it is the earliest found footage of dinosaurs. I want to seduce the audience with the myth of the real dinosaur, but also to convey its false authenticity, thus allowing for the fictive dinosaur to reemerge.

The use of blue tinted archival and handprocessed rephotographed material is applied to exemplify Russell's proposition that the archival impulse creates a kind of science fiction in its reimagining. As the "archival dinosaurs" give way to blue tinted marine reptiles that transform into heavy machinery

exhausting the once natural, an extinct sea rises to envelop its massive operation. Instead of sinking, the dinosaur takes to the sky returned to the “real” they survey the terrible world that is our lost world, lost landscape, lost resources, lost biospheres that can never truly be recovered. Our perspective is finally aligned with the true ancestors of the dinosaurs.

Conclusion

The research creation process was a wonderfully complex, at times confounding but always a rewarding experience. The last three years have granted me the space to explore a visual language and theoretical tools to uncover methods, and ideas that could only come together through a persistent and evolving approach. I liken the experience to the paleontologist who prospects by walking great distances and following their intuition until eventually they discover something. The revelation of the discovery however big or small may take weeks, months, or decades to uncover but their time and work in the field will reverberate through all other explorations.

Filmography

O'er the Land (Deborah Stratman), 2009

The Smell of Burning Ants (Jay Rosenblatt), 1994

The Voyagers (Penny Lane), 2010

Sink or Swim (Su Friedrich), 1990

I Remember: A Film About Joe Brainard, (Matt Wolf), 2012

Fantasia (Walt Disney), 1940

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Appendix A: Voice Over Script

In his writings, WJT Mitchell proposes a deep future, 60 million years from now.

In this future, visitors from another galaxy come to earth and excavate the ruins
of human civilization.

When they dig up our museums they find the re-assembled bones of dinosaurs
fascinating.

They begin to wonder whether these giant figures were animal deities
resurrected for public worship.

The mythic gold guarding griffon was imagined from the fossils of Ceratopsian
dinosaurs.

Half bird

Half lion

They kept thieves away from the earth's rocks and minerals.

For millions of years,
They protected the black gold in these hills.

Once known as the wonder town of the west, Drumheller brought warmth to
Western Canada. Trains pulled 56 000 000 tons of domestic coal out of the
valley.

When Imperial Oil struck an immense source of petroleum in Leduc Alberta the
province was transformed. Oil and Gas quickly became its main industry.

Domestic Coal went the way of the dinosaur.
And not long after, Leduc's wells ran dry and the oil derricks moved on.

Tourism revitalizes these depressed towns.
They survive on the stories and gestures of the past.

With the development of paleontology at the cusp of the industrial revolution
it is no wonder that dinosaurs have become icons of modernity.

Here, Albertasaurus greets visitors to the Royal Tyrrell museum of paleontology
named for the coal prospector who first discovered them.

The museum was officially bestowed the "Royal" title by Queen Elizabeth the IInd
during her visit to Alberta.

The first saurian sculpture garden was commissioned by Queen Victoria's
husband Prince Albert.

These ancient creatures were recreated for the grounds of the Crystal Palace,
the iron and glass building constructed for the first world's fair.

The dinosaur fit perfectly into the mix of ancient and modern, exotic and familiar.
The exhibition told the story of Great Britain as powerful, clever,
and capable of colonizing the people and places of earth
as well as time itself¹⁵.

Every animal was thoroughly studied by Hawkins.
He spent months examining fossils and studying Richard Owen's discoveries.

Richard Owen published the first accounts of land reptiles.
He classified them dinosaurian.

The crystal palace dinosaurs are based on fossils found in British soil.

Don't all dinosaurs possess a kind of national identity?
Like Albertasaurus or the recently discovered Argentinosaurus.

Their bones resurrected, and replicated, models of ancient provenance.

On New Years Eve Hawkins invited the brightest scientific minds to dine inside
the belly of the Iguanodon sculpture.

A song was written especially for the occasion and the men sang late into the
night.

In 1936 the Crystal Palace burnt down
but Hawkins dinosaurs remain to this day:

15 Mitchell, 98

The last architecture of the Great Exhibition
And the first dinosaur sculptures built for the edification of the public.

The dragon is the forgotten cultural ancestor of the dinosaur.
Once imagined as majestic fire breathing monsters
guarding tombs of immense treasure
slayed by Kings and heroic warriors.

Now dinosaurs are associated with the quintessential modern form of buried
treasure.

They are no longer thought of as guardians.
Their purpose forgotten
They have been tamed.

The Dino brand matured during the golden age of capitalism.
Sinclair advanced the false idea that their gasoline underwent a special
paleontological aging process.

Dinosaur toys, stamps and other collectibles were given to
customers with every tank of gas¹⁶.
370 million years collapsed into each tiny object, souvenirs of deep time.
A utopian promise for the perpetual now.

When the aliens discover the ruins of the world's attractions they will once again
be confronted by the massive dinosaur.

Found amongst the remnants of truck stops, malls, museums, schools and parks.

Part myth, part science, and part fantasy.

What would a future intelligence make of this obsession?

As the aliens excavate deeper into the fossil record
they discover millions of tiny objects
made of hard durable material.

Like the gigantic animal deities, these forms resemble the dinosaur.

¹⁶ Mitchell, 25

As they collect the small artifacts
they might imagine that humans used this material to immortalize sacred objects.

There is a theory that the dreams of mammals stem from something called
the R complex or the Reptile complex.

Tucked into the human brain
the R-complex is where both dreams and our most terrible thoughts come from.

The theory supposes that dinosaurs
have no subconscious to suppress;
The reptile complex is never dormant but always dreaming.

Maybe fantasies like these originate in the r-complex
An impossible collision of mass extinction and mass resurrection.
Just like Northern Alberta.

The entire Athabasca region was once covered in ocean.

When dinosaurs and prehistoric marine reptiles are accidentally uncovered by
heavy machinery paleontologists fly in to rescue their bones, put them back in
order, and re-animate their last stance.

We like to imagine their return.

But what if these claws and cranes could wake the dinosaur?

Would they wreak havoc like we've imagined so many times?

What waking life could they possibly have beyond the reflection of our fears and
desires?

Their Ferocity, dominion and destruction have been domesticated.

But maybe they are waking the emissions from their disrupted sleep hailing both
the coming and going of the Anthropocene.
